

2025

Generation Equipment Status Annual

Equipment Reliability Information System



ACKNOWLEDGEMENTS

The Electricity Canada gratefully acknowledges the support of the participant utilities whose data was used in the preparation of this report. We also wish to thank the Generation Reliability Committee (GRC) and in particular our chair Danielle Siegrist (FortisBC) and vice chair Samantha Smith (Newfoundland Labrador Hydro).

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INTRODUCTION

Electricity Canada was founded in 1891 and is the voice of the Canadian electricity industry, promoting electricity as the critical enabler of the economy and Canadians' expectations for an enhanced quality of life. A safe, secure, reliable, sustainable, and competitively priced supply of electricity is essential to Canada's prosperity. Generation Equipment Status Reports contains information that feeds directly into the "reliable" portion of Electricity Canada's Mission.

SCOPE:

This report on the Generating Unit performance has been produced since 1980 and includes statistics for commercial generating units in Canada of the following specifications:

- Combustion Turbine units with a Maximum Continuous Rating (MCR) > 1 MW
- Thermal units with MCR > 60 MW
- Hydro units with MCR > 0 MW
- Nuclear units with MCR > 200 MW
- Thermal units including Coal, Oil and Natural Gas

USE OF INFORMATION:

Information from this report can be used by utility companies to

- benchmark Generating Unit performance
- make decisions regarding new Generating Unit Construction
- make decisions regarding existing Unit upgrades
- focus resources for maintenance programs and system planning

The goal of using the information is to maximize Generating Unit performance within a company's financial and logistical constraints.

CONTRIBUTORS:

The publication of this report would not be possible without the data contribution of member utilities. These members include:

BC Hydro
Churchill Falls (Labrador Corp)
FortisBC
Heartland Generation
Manitoba Hydro

New Brunswick Power
Newfoundland & Labrador Hydro
Nova Scotia Power
Ontario Power Generation
Rio Tinto
SaskPower

The utilities listed above receive a copy of the report contained herein as well as Summary Statistics for generating unit performance for all participating utilities

DATABASE OVERVIEW

Electricity Canada has been collecting performance data for Canadian generating units from participating utilities since 1978. This database of information is used to produce this annual report. There is a wealth of information stored in the database including:

- Performance data on over 1000 generating units
- Details of over 7000 equipment components
- Fuel types including Hydro, Thermal, Combustion Turbine, Internal Combustion and Nuclear
- Details about individual generating units including manufacturers, Maximum Continuous Ratings (MCRs), ages
- Design information including speeds, ratings, temperatures, insulation types, pressures, capacities, diameters
- Component information for fans, pumps, condensers, boilers, generators, turbine reactors

Participating utilities monitor every change in state including:

- Normal operation
- derated states – including forced and scheduled
- outage states – including forced and scheduled
- available but not operating

More details about the states monitored can be found in section 4, Definition of Terms, Table of State and Time Codes.

The collection of this data follows a common set of definitions that has been accepted as the global industry standard for over 20 years. This data is reported to Electricity Canada annually and Electricity Canada follows a rigorous validation process for monitoring data quality to ensure that this report is of a high standard.

DEFINITION OF TERMS

Generating Unit: all equipment up to the high voltage terminals of the generator transformer and the station service transformers.

Maximum Continuous Rating (MCR): the gross maximum electrical output (in megawatts) which a generating unit has been designed for and/or shown by acceptance test to be capable of producing continuously.

The definitions of outages, deratings, states and times are reproduced here from the Instruction Manual on Generation Equipment Status.

Definition of Outages and Deratings

Forced Outage: the occurrence of a component failure or other condition which requires that the generating unit be removed from service immediately or up to and including the very next weekend.

There are 4 types of Forced Outages:

1. **Sudden Forced Outage:** the occurrence of a component failure or other condition which results in the unit being automatically or manually tripped.
2. **Immediately Deferrable Forced Outage:** the occurrence of a component failure or other condition which requires that the unit be removed from service within 10 minutes.
3. **Deferrable Forced Outage:** the occurrence of a component failure or other condition which requires that the unit be removed from service from 10 minutes up to and including the very next weekend.
4. **Starting-Failure Outage:** the unsuccessful attempt to bring a unit from a shutdown state to synchronism with the electric system within a specified time interval. (The specified time interval may be different for individual units and should allow a reasonable time for the unit to pick up load.) This definition is most commonly associated with stand-by and peak units. *Note: repeated failures to start for the same cause without accomplishing corrective repairs are counted as one failure and the repeated attempts at starting are counted as a single attempt.*

Maintenance Outage: the removal of a generating unit from service to perform work on specific components which could have been postponed past the very next weekend. This is work done to prevent a potential forced outage and which could not be postponed from season to season.

Planned Outage: the removal of a generating unit from service for inspection and/or general overhaul of one or more major equipment groups. This work is usually scheduled well in advance (e.g. annual boiler overhaul, five-year turbine overhaul).

Forced Derating: a reduction (below MCR) of generating unit capacity in excess of 2% of its MCR resulting from a component failure or other condition which requires that the generating unit be derated at once or as soon as possible up to and including the very next weekend.

Scheduled Derating: a reduction (below MCR) of generating unit capacity in excess of 2% of its MCR resulting from a planned or maintenance outage of a piece of equipment.

Definition of States, (State Codes)

Operating State, (11): the generating unit is spinning and/or synchronized with the system and is capable of operating at MCR under normal operating procedures. Operating under a Forced Derating, (12): the generating unit is spinning and/or synchronized with the system but not capable of carrying its MCR due to a forced derating being in effect.

Operating under a Forced Derating, (12): the generating unit is spinning and/or synchronized with the system but not capable of carrying its MCR due to a forced derating being in effect.

Operating under a Scheduled Derating, (13): the generating unit is synchronized with the system but not capable of carrying its MCR due to a scheduled derating being in effect.

Available But Not Operating State, (14): the generating unit can carry its MCR but is not being operated to supply system load.

Available But Not Operating – Forced Derating State, (15): the generating unit can deliver only part of its MCR due to a forced derating but is not being operated to supply system load.

Available But Not Operating – Scheduled Derating State, (16): the generating unit can deliver only part of its MCR due to a scheduled derating but it is not being operated to supply system load.

Forced Outage State, (21): the generating unit has a forced outage which requires that it be removed from service.

Forced Extension of a Maintenance Outage State, (22): the generating unit has an outage resulting from a condition discovered during a maintenance outage which has forced the extension of the maintenance outage.

Forced Extension of a Planned Outage State, (23): the generating unit has an outage resulting from a condition discovered during a planned outage which has forced the extension of the planned outage.

Maintenance Outage State, (24): the generating unit has a maintenance outage which requires that it be removed from service.

Planned Outage State, (25): the generating unit has a planned outage which requires that it be removed from service.

Major Overhaul/Capital Projects (26): The removal of a generating unit from service for a prolonged outage

Planned Extension of a Maintenance Outage (28): The Generating Unit is on a Planned Extension of a Maintenance Outage where the scope of work stayed as defined but took longer to complete

Planned Extension of a Planned Outage (29): The Generating Unit is on a Planned Extension of a Planned Outage where the scope of work stayed as defined but took longer to complete.

Not in Commercial Service State, (30): the generating unit is decommissioned, mothballed, or on a prolonged outage to make modifications that will alter its performance beyond the original design and/or provide life extension through rehabilitation. The type codes associated with this state are:

- 1 - Decommissioned
- 2 - Mothballed
- 3 - Refurbishment
- 4 - Deferred

Operating as a Synchronous Condenser/Spin No-Load: The above state codes can also be used to identify the various modes of synchronous condenser or spin no-load (spinning reserve at 0 MW) operation as follows:

STATE OF THE TURBINE	STATE CODE OF THE UNIT
Spin No-Load De-Coupled (Hydro units only)	11, 12, 13
Synchronous Condenser Coupled	11, 12, 13
Unbolted or declutched but available	14, 15, 16
Unbolted or declutched but not available	21, 22, 23, 24, 25, 26, 28, 29

Definition of Times

O: the number of hours the generating unit was in the Operating State during the period.

O(FD): the number of hours the generating unit was operating under a Forced Derating during the period.

O (SD): the number of hours the generating unit was operating under a Scheduled Derating during the period.

ABNO: the number of hours the generating unit was in the Available But Not Operating State.

ABNO(FD): the number of hours the generating unit was in the Available But Not Operating - Forced Derating State.

ABNO (SD): the number of hours the generating unit was in the Available But Not Operating - Scheduled derating State.

FO: the number of hours the generating unit was in a Forced Outage State.

FEMO: the number of hours the generating unit was in a Forced Extension of a Maintenance Outage State.

FEPO: the number of hours the generating unit was in a Forced Extension of a Planned Outage State.

MO: the number of hours the generating unit was in the Maintenance Outage State.

PO: the number of hours the generating unit was in the Planned Outage State.

PCUP: the removal of a generating unit from service for a prolonged outage to make modifications that will alter its performance beyond the original design and/or provide life extension through rehabilitation.

PEMO: the Generating Unit is on a Planned Extension of a Maintenance Outage where the scope of work stayed as defined but took longer to complete.

PEPO: the Generating Unit is on a Planned Extension of a Planned Outage where the scope of work stayed as defined but took longer to complete.

Table of State and Time Codes (Summary of Section 4.2 and 4.3)

States	State Codes	Duration (Hours)
<u>Available States</u>		
Operating	11	O
Operating under a Forced Derating	12	O(FD)
Operating under a Scheduled Derating	13	O(SD)
Available But Not Operating	14	ABNO
Available But Not Operating - Forced Derating	15	ABNO(FD)
Available But Not Operating - Scheduled Derating	16	ABNO(SD)
<u>Not-Available States:</u>		
Forced Outage	21	FO
Forced Extension of Maintenance Outage	22	FEMO
Forced Extension of Planned Outage	23	FEPO
Maintenance Outage	24	MO
Planned Outage	25	PO
Planned Capital / Upgrade Projects	26	PCUP
Maintenance Outage Extension	28	PEMO
Planned Outage Extension	29	PEPO
No-in-Commercial Service	30	NICS

The Concept of Adjusted Time:

To take into account the derated levels of a generating unit, the operating time at these levels is transformed into an equivalent outage time. Thus, the time of X% of MCR, called $O(FD)_x$, is converted to an equivalent outage time, called $O(FD)_{adj}$ according to the transformation.

$$O(FD)_{adj} = \left(\frac{100 - x}{100} \right) O(FD)_x$$

For example, if a generating unit is derated to 80 percent of its MCR for 5 hours, that would be equivalent to a full outage of the generating unit for 1 hour. $O(SD)$, $ABNO(FD)$ and $ABNO(SD)$ are treated in the same manner.

4.4 Definition of Headings Used on the Tables of Sections 5 and 6

4.4.1 Column Headings

UNIT YEARS (A): the number of Unit Hours divided by 8760. The number of Unit Hours is the sum of the durations of all states (i.e. $O + O(FD) + O(SD) + ABNO + ABNO(FD) + ABNO(SD) + FO + FEMO + FEPO + MO + PO$) of the generating units being considered.

ABNOF (%): the Available But Not Operating Factor. It is calculated by dividing $ABNO + ABNO(FD) + ABNO(SD)$ by Unit Hours times 100.

OP FACTOR (%): Operating Factor. It is calculated by dividing the Total Operating Time by Unit Hours times 100. Total Operating Time means the sum of $O + O(FD) + O(SD)$.

NO. OF FORCED OUTAGES: the number of occurrences of State Codes 21, 22 and 23.

TOTAL F.O.T. (A): Total Forced Outage Time expressed in years. It is $FO + FEMO + FEPO$ divided by 8760.

MAXIMUM F.O.D. (H): the longest single residence in hours of one of the forced outage states 21, 22 and 23 in the study period.

TOTAL EQ. OUT. TIME (A): the Total Equivalent Outage Time expressed in years. It is the Total Forced Outage Time plus planned and maintenance outage times plus adjusted derated times (i.e. $FO + FEMO + FEPO + MO + PO + O(FD)_{adj} + O(SD)_{adj} + ABNO(FD)_{adj} + ABNO(SD)_{adj}$ all divided by 8760). This equivalent time is used when calculating ICBF.

ICBF (%): the Incapability Factor. It is the ratio of Total Equivalent Outage Time, in hours, to number of Unit Hours times 100.

CBF (%) is the complement of the Incapability Factor. It is calculated by subtracting ICBF from 100. This index is not listed in the report tables.

WEIGHTED CAPABILITY FACTOR (%) is the Capability Factor of a unit weighted by its MCR

Weighted Capability Factor = 1- weighted

$$= \frac{1 - \sum ICBF \times MCR}{\sum MCR}$$

FAIL RATE: the Failure Rate. It is the rate at which a generating unit encounters a forced outage. It is computed by dividing the Number of Transitions from an Operating State (11, 12 and 13) to a Forced Outage (21) by the Total Operating Time times 8760.

MEAN F.O.D. (H): the mean duration of a forced outage. It is computed by dividing the Total Forced Outage Time by the Number of Forced Outages.

FOR (%): the Forced Outage Rate. It is the ratio of Total Forced Outage Time to Total Forced Outage Time plus Total Operating Time times 100.

$$FOR = \frac{FO + FEMO + FEPO}{FO + FEMO + FEPO + O + O(FD) + O(SD)} \times 100$$

Cautionary Note: The Forced Outage Rate obtained by the above equation is not equal to Lambda over Lambda + Mu ($\lambda/\lambda+\mu$) where Lambda (λ) is the Fail Rate and Mu (μ) is the reciprocal of Mean F.O.D.

DAFOR (%): the Derated Adjusted Forced Outage Rate. It is the ratio of Equivalent Forced Outage Time (i.e. $FO + FEMO + FEPO + O(FD)_{adj} + ABNO(FD)_{adj}$) to Equivalent Forced Outage Time plus Total Equivalent Operating Time (i.e. $O + O(SD) + (O(FD) - O(FD)_{adj})$). This can be written as follows:

$$DAFOR = \frac{FO + FEMO + FEPO + O(FD)_{adj} + ABNO(FD)_{adj}}{FO + FEMO + FEPO + ABNO(FD)_{adj} + O + O(FD) + O(SD)} \times 100$$

MOF (%): the Maintenance Outage Factor. It is computed by dividing the number of maintenance outage hours by the number of Unit Hours times 100.

POF (%): the Planned Outage Factor. It is computed by dividing the number of planned outage hours by the number of Unit Hours times 100.

SYN. CD. FACTOR (%): the Synchronous Condenser Factor. It is the total hours spent as a synchronous condenser divided by the number of Unit Hours times 100.

SR: the Starting Reliability. It gives the ratio of successful starts to start attempts.

$$SR = \frac{\text{Total Attempted Start} - \text{Total Start Failures}}{\text{Total Attempted Starts}}$$

Total Start Failures = Total number of occurrences of State 21 type 4.

Total Attempted Starts = Total Start Failures plus the number of transitions to states 11, 12 and 13 from any of the remaining states plus the number of transitions into a synchronous condenser mode from a not operating state.

UFOP (%): the Utilization Forced Outage Probability. It is the probability that a generating unit will not be available when required.

$$UFOP = \frac{f(FO + FEMO + FEPO)}{f(FO + FEMO + FEPO) + O + O(SD) + O(FD)}$$

Where f = Demand Factor

$$= \frac{\left(\frac{1}{r} + \frac{1}{T}\right)}{\left(\frac{1}{D} + \frac{1}{r} + \frac{1}{T}\right)}$$

Where r = Average Forced Outage Time (see above)

D = average in-service time per occasion of demand

$$= \frac{O + O(FD) + O(SD)}{SR \times \text{Total Attempted Starts}}$$

T = average reserve shutdown time between periods of need, exclusive of periods for maintenance or other planned unavailability.

$$D + T = \frac{O + O(FD) + O(SD) + ABNO + ABNO(FD) + ABNO(SD)}{\text{Total Attempted Starts}}$$

DAUFOP (%): the Derated Adjusted Utilization Forced Outage Probability. It is the probability that a generating Unit will not be available when required (derating included).

It can be calculated as follows:

$$DAUFOP = \frac{f(FO + FEMO + FEPO) + O(FD)_{adj}}{f(FO + FEMO + FEPO) + O + O(FD) + O(SD)}$$

Row Headings

The row headings indicate the data for which the statistics in that row have been calculated.

YEARS 0 UNIT: all year zero data for a particular generating unit type over the specified time interval. For example, in the combined 1998-02 report, this row would have the 2002 data for the generating units commissioned in 2002 and the 2001 data for the generating units commissioned in 2001 and so on.

EXCL YR 0: all data for a particular generating unit type minus the year 0 data.

ALL UNITS: the data for all generating units of a particular type.

CLASSIFICATION BY MCR (MW): the data for all generating units whose MCR's fall within the indicated range.

CLASSIFICATION BY YEAR OF SERVICE: the data for all generating units in the indicated year or years of service. For example, a generating unit that was commissioned in 1994 would have its 1994 data grouped in the "0" row and its 1995 data in the "1st" row.

CLASSIFICATION BY OPERATING FACTOR: the data for all generating units with operating factors in the indicated ranges over the specified time interval.

Calculation of Cumulative Normalized Unit Years

Cumulative Normalized Unit Years is plotted on one of the graphs in Section 5-1 of this report. The information to produce the figure was taken from the Classification By Operating Factor sections of Tables 6.1.1, 6.2.1, 6.3.1 and 6.4.1. The calculation of the Cumulative Normalized Unit Years corresponding to the Operating Factor of 50% for combustion turbine units is given below to illustrate the method of calculation. Referring to Table 6.3.1, the sum of the unit years with operating factor equal to or less than 50% is 34 unit years. As the total for all units is 36.0 unit years, the percentage of unit years with operating factor equal to or less than 50% is $(34/36) \times 100$ or 94.4% as is plotted on the graph.

All Unit Types Summary Statistics

The bottom of the page features several thin, wavy, light blue lines that sweep across the width of the slide. Three small, solid blue dots are placed along these lines: one near the bottom left, one near the bottom center, and one slightly higher and further to the right.

All Canada Summary (2025)

TOTAL NUMBER OF GENERATING UNITS

Unit Type	Current Year	Last 5 Years
Hydro	515	524
Thermal	27	40
Nuclear	13	13
Combustion	34	34
Combined Combustion Units	18	18
Thermal Combined Cycle Steam	5	6
Total	612	635

ALL CANADA SUMMARY – UNWEIGHTED INDICATORS (EXTERNAL CAUSES EXCLUDED)

Unit Type	Unit Years	OPTime	Forced Outages	Total FOT	Mean FOD	Total EQ	AttemptedStarts	SuccessfulStarts
Hydro	501.30	306.04	1057.00	26.81	222.16	86.91	31719.00	30918.00
Thermal	26.47	15.63	131.00	1.08	72.43	7.67	308.00	306.00
Nuclear	6.39	5.78	7.00	0.21	261.13	0.66	9.00	9.00
Combustion	32.13	6.21	304.00	0.81	23.35	4.03	1532.00	1425.00
Combined Combustion Units	16.59	12.75	33.00	0.07	19.73	1.69	315.00	313.00
Thermal Combined Cycle Steam	5.00	4.08	40.00	0.13	28.70	0.87	66.00	62.00

ALL CANADA SUMMARY (%) – OTHER INDICATORS (EXTERNAL CAUSES EXCLUDED)

Unit Type	Wgt	ABNOF	SyncCD	OPFactor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Hydro	Unweighted	22.70	5.35	60.52	7.87	8.06	6.18	16.96	1.69	83.21	1.36	10.20	5.23
Thermal	Unweighted	16.42	0.00	56.95	6.53	9.15	7.50	29.02	6.69	73.37	1.89	20.63	4.11
Nuclear	Unweighted	3.36	0.00	89.08	2.84	3.33	3.32	8.22	0.84	92.44	0.00	4.95	2.61
Combustion	Unweighted	69.22	9.79	19.09	10.93	13.11	3.94	12.38	13.83	88.30	1.45	7.75	2.49
Combined Combustion Units	Unweighted	19.97	0.00	71.05	0.52	1.04	0.99	9.39	2.19	91.02	1.21	7.36	0.41
Thermal Combined Cycle Steam	Unweighted	1.52	0.00	81.54	3.11	3.70	3.65	17.44	8.83	83.05	0.70	13.63	2.62
Hydro	Weighted	22.12	8.43	63.81	4.09	4.28	3.31	14.24	0.02	85.92	1.74	9.60	2.73
Thermal	Weighted	15.79	0.00	57.82	6.92	9.72	7.98	29.19	0.03	73.61	1.22	20.79	4.38
Nuclear	Weighted	3.00	0.00	89.67	2.66	3.21	3.21	8.05	0.00	92.67	0.00	4.87	2.45
Combustion	Weighted	68.12	6.73	20.80	10.05	11.57	3.53	11.79	0.20	88.92	1.24	7.47	2.38
Combined Combustion Units	Weighted	10.88	0.00	78.24	1.56	3.09	2.98	12.15	0.03	89.13	0.92	8.65	1.30
Thermal Combined Cycle Steam	Weighted	1.83	0.00	81.93	3.48	4.25	4.19	16.90	0.10	83.76	0.53	12.76	2.95

All Canada Summary - 5 Years - (2021 - 2025)

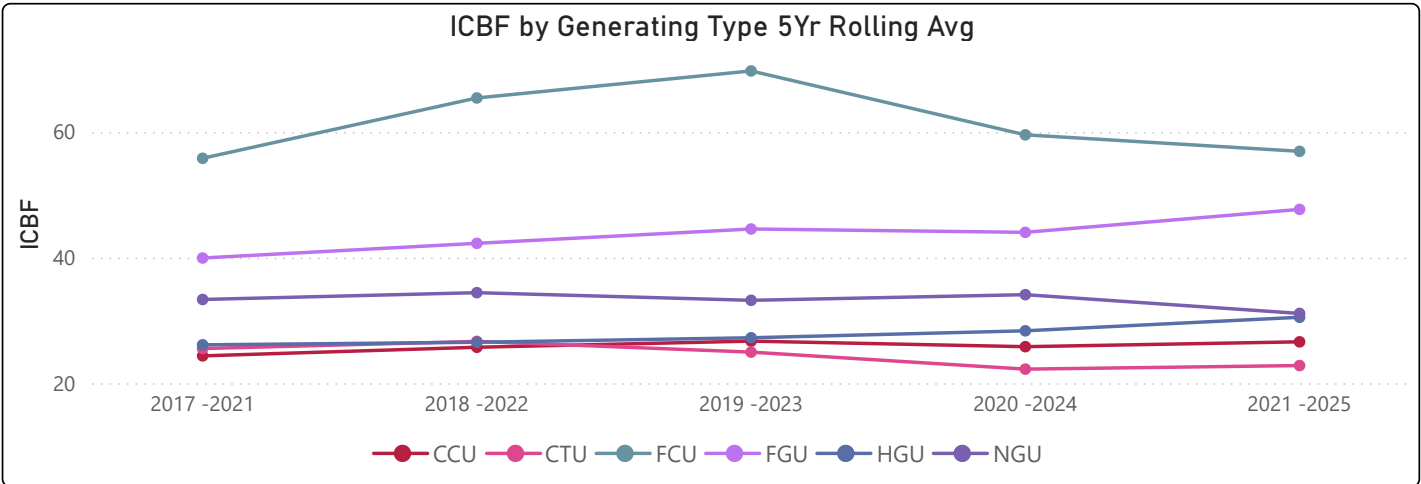
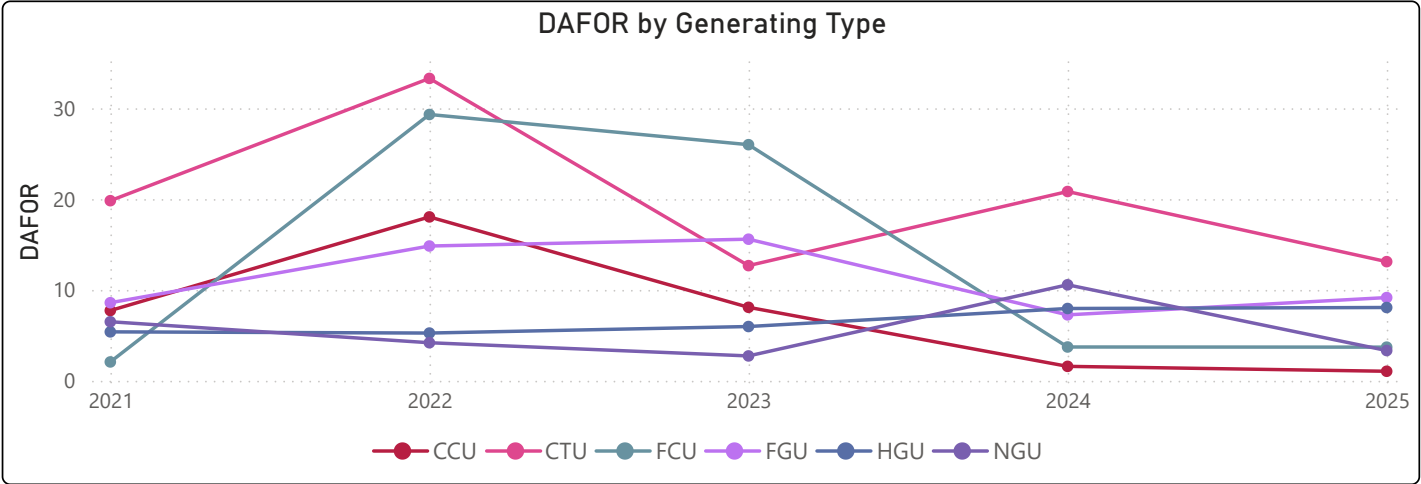
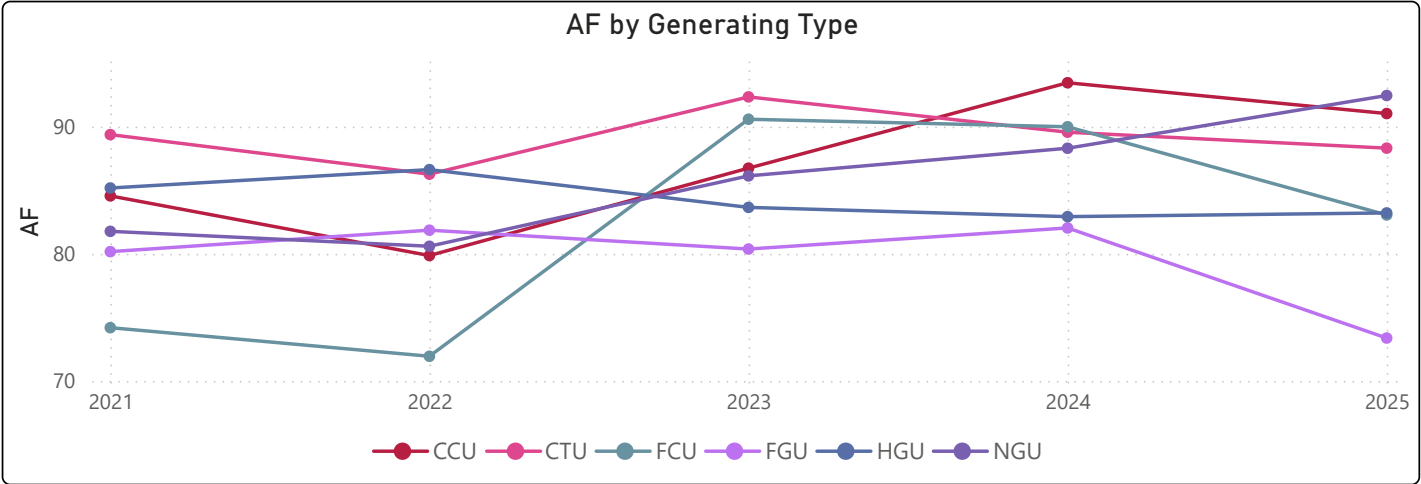
ALL CANADA SUMMARY – UNWEIGHTED INDICATORS (EXTERNAL CAUSES EXCLUDED)

Unit Type	Unit Years	OPTime	Forced Outages	Total FOT	Mean FOD	Total EQ	Attempted Starts	Successful Starts
Hydro	2,356.81	1,544.51	5681	102.20	157.60	389.90	153865	152360
Thermal	155.77	88.92	832	5.87	61.80	38.34	2357	2338
Nuclear	36.34	29.79	49	1.77	316.98	7.07	68	68
Combustion	152.73	27.82	1325	6.57	43.46	17.35	6744	6356
Combined Combustion Units	82.39	63.37	235	4.72	175.96	11.50	1436	1429
Thermal Combined Cycle Steam	23.05	17.88	99	0.72	63.37	6.70	197	192

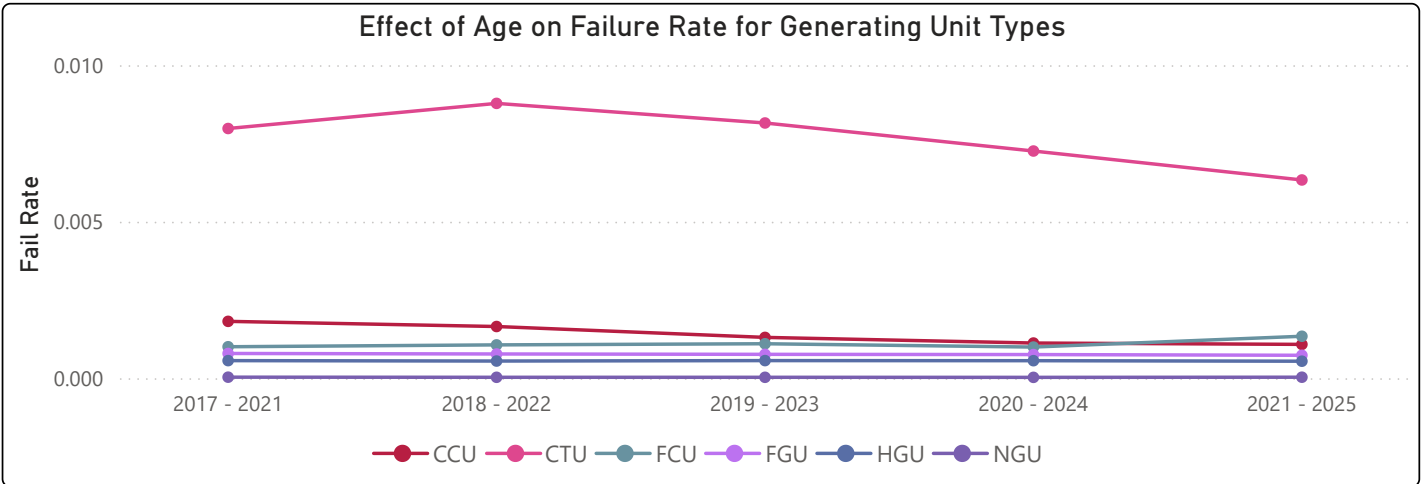
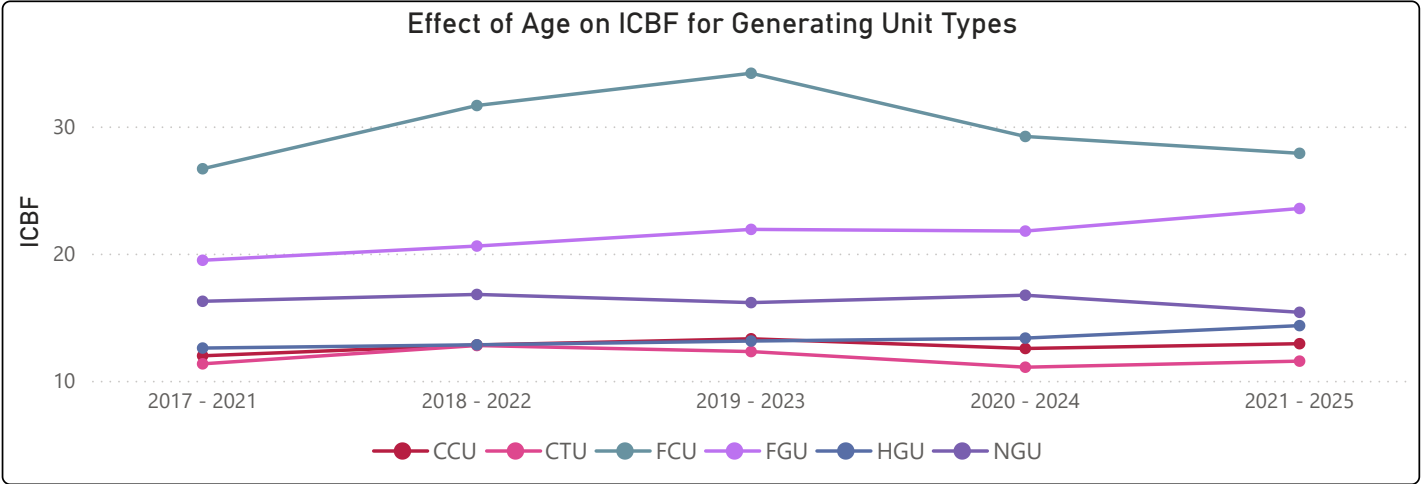
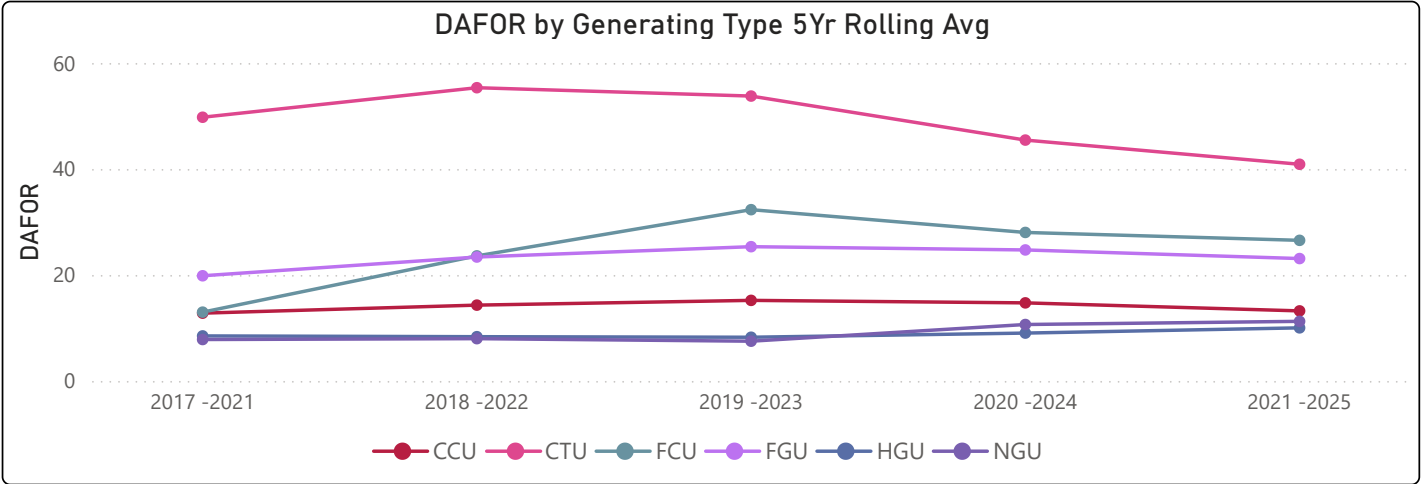
ALL CANADA SUMMARY (%) – OTHER INDICATORS (EXTERNAL CAUSES EXCLUDED)

Unit Type	Wgt	ABNOF	SyncCD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Hydro	Unweighted	19.36	5.52	64.89	6.10	6.55	5.23	16.20	2.00	84.25	1.46	10.04	4.25
Thermal	Unweighted	23.87	0.55	55.95	6.02	11.01	9.34	24.08	6.85	79.83	2.12	14.36	3.69
Nuclear	Unweighted	2.87	0.00	82.72	4.55	5.48	5.47	15.72	0.91	85.59	0.25	10.22	3.94
Combustion	Unweighted	71.00	12.06	18.10	18.73	19.90	5.77	11.25	17.99	89.10	0.62	6.02	4.26
Combined Combustion Units	Unweighted	11.68	0.00	75.42	6.79	7.27	6.51	13.68	2.79	87.10	0.73	6.55	5.61
Thermal Combined Cycle Steam	Unweighted	3.70	0.00	77.54	3.85	12.94	12.72	29.05	5.15	81.24	2.78	12.87	3.11
Hydro	Weighted	17.15	8.33	68.92	3.15	3.47	2.81	14.29	0.02	86.06	1.73	9.96	2.25
Thermal	Weighted	27.91	0.35	52.94	6.14	12.09	9.99	23.59	0.03	80.85	1.36	14.25	3.53
Nuclear	Weighted	2.75	0.00	83.21	4.81	5.77	5.76	15.38	0.00	85.96	0.26	9.58	4.21
Combustion	Weighted	70.64	8.36	18.12	20.16	20.99	6.00	11.55	0.28	88.75	0.49	6.11	4.65
Combined Combustion Units	Weighted	8.07	0.00	79.99	5.23	5.95	5.52	12.90	0.05	88.05	0.57	6.91	4.46
Thermal Combined Cycle Steam	Weighted	3.01	0.00	79.35	4.09	13.59	13.39	27.87	0.06	82.36	2.21	12.05	3.38

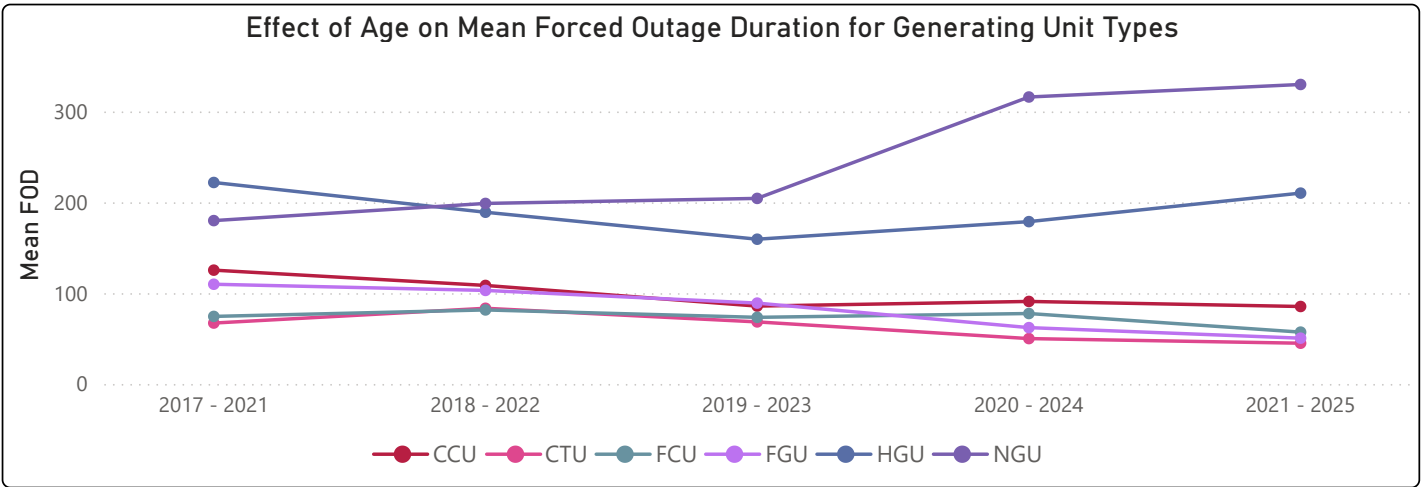
All Canada Summary (External Causes excluded)



All Canada Summary (External Causes excluded)



All Canada Summary (External Causes excluded)



Generating Unit

Hydro



Hydro

(External Causes excluded - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-100	396.67	823.00	25.01	8759.98	266.22	74.0329	19,633.00	18910.00
101-200	70.82	175.00	1.48	4735.77	74.17	8.1917	10,222.00	10159.00
201-300	7.00	16.00	0.04	102.23	22.10	0.8059	456.00	452.00
301-400	5.00	10.00	0.03	150.52	22.47	0.5381	485.00	476.00
401-500	10.96	12.00	0.16	1171.25	113.29	1.8258	531.00	531.00
500 & OVER	10.85	21.00	0.09	129.23	38.27	1.5131	392.00	390.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	64.42	101.00	2.71	8759.98	235.32	8.5861	4,001.00	3973.00
11TH-20TH	14.93	37.00	0.87	3831.18	205.35	2.4135	548.00	545.00
21ST-30TH	50.04	68.00	2.80	8759.98	360.94	8.7663	459.00	453.00
31ST-40TH	76.58	159.00	4.73	8759.98	260.50	15.3874	6,360.00	6341.00
41ST-50TH	137.11	264.00	8.77	8759.98	290.88	27.0169	8,573.00	8545.00
51TH & UP	151.78	419.00	6.76	6042.28	141.24	23.9422	11,620.00	10903.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	34.50	64.00	13.90	8759.98	1,903.00	26.5110	1,340.00	703.00
11-20	26.65	47.00	2.56	5879.98	477.84	9.4222	1,689.00	1685.00
21-30	27.50	76.00	3.46	6687.67	398.43	8.5505	2,242.00	2228.00
31-40	35.79	114.00	0.27	312.97	21.05	5.5335	5,477.00	5446.00
41-50	43.15	84.00	1.85	4909.78	193.08	8.6589	4,250.00	4234.00
51-60	65.58	161.00	1.70	2552.43	92.69	7.3600	5,848.00	5820.00
61-70	66.44	140.00	0.85	1832.20	53.48	8.1095	5,584.00	5543.00
71-80	50.37	117.00	1.19	1171.25	88.89	5.2185	2,430.00	2411.00
81-90	56.35	129.00	0.68	1355.25	46.40	4.9237	1,371.00	1364.00
91-100	94.97	125.00	0.33	432.80	23.00	2.6196	1,488.00	1484.00
Total	501.30	1057.00	26.81	8759.98	222.16	86.9074	31,719.00	30918.00

Hydro

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-100	Unweighted	21.13	4.94	60.90	9.04	9.25	7.28	18.17	0.02	82.03	0.00	10.49	6.14
101-200	Unweighted	32.29	4.86	56.27	3.57	3.71	2.45	11.54	0.02	88.56	0.00	8.32	2.09
201-300	Unweighted	14.11	12.93	74.38	0.77	0.77	0.65	11.51	0.03	88.49	0.00	10.56	0.58
301-400	Unweighted	32.38	0.00	56.85	0.89	0.89	0.60	10.76	0.00	89.24	0.00	10.24	0.51
401-500	Unweighted	18.70	22.28	64.73	2.12	2.12	1.67	16.60	0.01	83.42	0.00	13.57	1.41
500 & OVER	Unweighted	23.88	4.13	62.37	1.32	1.32	0.99	13.76	0.03	86.25	0.01	7.83	0.83
0-100	Weighted	16.74	7.65	67.50	6.39	6.78	5.68	16.11	0.00	84.24	0.00	9.80	4.65
101-200	Weighted	31.58	5.28	57.10	3.67	3.79	2.53	11.41	0.00	88.68	0.00	8.02	2.18
201-300	Weighted	14.64	13.26	73.71	0.82	0.82	0.69	11.65	0.00	88.35	0.00	10.65	0.61
301-400	Weighted	32.23	0.00	56.97	0.90	0.90	0.60	10.80	0.00	89.20	0.00	10.28	0.52
401-500	Weighted	18.69	22.15	64.99	2.16	2.16	1.70	16.34	0.00	83.68	0.00	13.25	1.44
500 & OVER	Weighted	23.82	4.24	62.43	1.32	1.32	0.99	13.75	0.00	86.25	0.00	7.88	0.84

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	42.33	1.38	44.67	8.16	8.17	4.60	0.00	0.02	87.00	0.90	0.00	4.11
11TH-20TH	Unweighted	24.48	8.98	59.98	8.79	9.52	7.30	0.01	0.03	84.45	0.46	0.01	5.78
21ST-30TH	Unweighted	21.26	0.27	61.61	8.04	8.11	6.41	0.00	0.02	82.86	3.11	0.00	5.49
31ST-40TH	Unweighted	22.13	2.92	58.79	9.07	9.05	6.79	0.00	0.02	80.92	0.52	0.00	5.87
41ST-50TH	Unweighted	19.68	5.09	61.02	9.23	9.42	7.47	0.00	0.02	80.70	2.37	0.00	6.31
51TH & UP	Unweighted	18.30	9.04	66.48	6.17	6.51	5.35	0.00	0.02	84.78	0.63	0.00	4.39
0TH-10TH	Weighted	31.62	9.92	59.03	1.65	1.66	1.11	0.00	0.00	90.65	0.28	0.00	0.99
11TH-20TH	Weighted	12.59	8.17	74.97	4.00	4.54	4.02	0.00	0.00	87.55	0.41	0.00	3.13
21ST-30TH	Weighted	17.05	3.01	64.67	8.10	8.23	6.78	0.00	0.00	81.72	1.11	0.00	5.74
31ST-40TH	Weighted	23.72	10.88	62.05	9.06	9.06	6.76	0.00	0.00	85.78	0.24	0.00	6.19
41ST-50TH	Weighted	22.78	7.42	61.47	3.64	3.75	2.84	0.00	0.00	84.25	3.27	0.00	2.34
51TH & UP	Weighted	20.75	8.97	66.72	3.57	3.93	3.17	0.00	0.00	87.47	0.45	0.00	2.48

Hydro

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	23.44	0.04	1.79	89.78	89.78	72.13	74.78	0.11	25.22	3.69	31.87	39.22
11-20	Unweighted	49.20	0.73	15.92	35.89	35.88	13.42	34.90	0.04	65.12	0.39	25.00	9.50
21-30	Unweighted	44.00	0.90	25.52	32.24	32.35	15.84	30.54	0.04	69.52	1.50	16.63	12.35
31-40	Unweighted	48.95	1.48	36.17	1.91	2.06	1.10	14.96	0.04	85.12	3.02	11.13	0.74
41-50	Unweighted	34.36	1.83	46.09	8.17	8.36	5.36	19.68	0.02	80.45	0.71	14.63	4.21
51-60	Unweighted	32.88	2.08	56.17	4.32	4.33	2.95	10.99	0.02	89.05	1.14	7.27	2.54
61-70	Unweighted	22.26	2.81	66.02	1.85	2.13	1.74	11.93	0.02	88.28	1.28	9.18	1.26
71-80	Unweighted	14.28	5.36	75.74	2.91	2.91	2.55	10.04	0.02	90.01	1.48	6.22	2.28
81-90	Unweighted	5.58	10.43	86.10	1.35	1.42	1.36	8.49	0.02	91.68	1.60	5.54	1.18
91-100	Unweighted	1.40	14.01	96.38	0.35	0.80	0.80	2.73	0.01	97.77	0.38	1.50	0.34
0-10	Weighted	20.44	0.10	3.22	79.05	79.05	63.39	76.36	0.00	23.66	1.24	48.06	27.05
11-20	Weighted	45.25	0.96	16.21	44.36	44.34	18.06	38.56	0.00	61.46	0.68	24.89	12.97
21-30	Weighted	48.78	0.80	26.12	18.51	18.75	8.29	25.18	0.00	74.90	6.83	12.23	6.04
31-40	Weighted	46.32	1.97	37.26	1.68	1.79	0.98	16.46	0.00	83.59	2.02	13.75	0.64
41-50	Weighted	39.42	3.47	45.93	3.57	3.67	2.27	14.72	0.00	85.35	1.45	11.48	1.72
51-60	Weighted	32.99	2.03	56.00	4.99	5.01	3.38	11.04	0.00	88.99	2.07	5.99	2.95
61-70	Weighted	22.16	7.61	65.85	1.47	1.81	1.51	12.24	0.00	88.01	0.83	10.17	0.99
71-80	Weighted	11.09	10.69	76.95	2.72	2.73	2.47	11.99	0.00	88.04	2.18	7.63	2.15
81-90	Weighted	3.93	11.13	86.35	0.92	0.97	0.93	9.84	0.00	90.28	2.18	6.74	0.80
91-100	Weighted	1.33	21.07	95.77	0.33	0.80	0.79	3.41	0.00	97.10	0.32	2.26	0.32
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		22.70	5.35	60.52	7.87	8.06	6.18	16.96	1.69	83.21	1.36	10.20	5.23
Weighted		22.12	8.43	63.81	4.09	4.28	3.31	14.24	0.02	85.92	1.74	9.60	2.73

Hydro

(External Causes excluded - 2021 - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-100	1842.35	4426.00	94.87	8783.98	187.76	324.66	99389.00	98292.00
101-200	345.36	931.00	5.41	4735.77	50.93	40.29	46570.00	46234.00
201-300	34.91	84.00	0.34	1123.30	35.73	4.36	1788.00	1773.00
301-400	24.98	58.00	0.16	428.10	24.70	3.45	2156.00	2127.00
401-500	54.92	105.00	1.03	1315.90	86.07	9.54	2814.00	2795.00
500 & OVER	54.30	77.00	0.39	1405.33	43.87	7.61	1148.00	1139.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	243.28	841.00	10.24	8759.98	106.65	37.32	17948.00	17788.00
11TH-20TH	129.84	253.00	15.01	8783.98	519.85	35.32	2029.00	2005.00
21ST-30TH	421.04	835.00	17.80	8783.98	186.72	64.01	21869.00	21805.00
31ST-40TH	147.28	305.00	6.07	8759.98	174.39	21.87	13918.00	13850.00
41ST-50TH	714.97	1640.00	29.94	8783.98	159.90	123.90	49836.00	49563.00
51TH & UP	685.70	1781.00	22.95	6042.28	112.88	105.98	46743.00	45827.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	115.07	249.00	41.24	8783.98	1450.95	82.78	3244.00	2588.00
11-20	93.16	264.00	11.46	7790.33	380.43	37.03	9727.00	9655.00
21-30	120.66	391.00	10.20	6860.88	228.43	32.60	14754.00	14697.00
31-40	148.45	486.00	6.97	5462.55	125.72	38.56	17806.00	17699.00
41-50	191.46	507.00	8.55	4909.78	147.64	43.23	18242.00	18148.00
51-60	236.27	579.00	7.05	5843.27	106.63	36.39	22994.00	22901.00
61-70	305.13	794.00	5.90	2963.90	65.14	42.58	27116.00	26959.00
71-80	299.12	777.00	5.35	2133.93	60.36	32.76	19102.00	18971.00
81-90	369.79	913.00	3.60	1355.25	34.56	29.46	12822.00	12714.00
91-100	477.70	721.00	1.87	631.90	22.75	14.52	8058.00	8028.00

Hydro

(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-100	Unweighted	18.84	5.13	64.49	7.17	7.66	6.19	17.18	0.02	83.34	1.44	10.21	5.02
101-200	Unweighted	25.12	4.88	63.56	2.40	2.78	1.96	11.63	0.02	88.68	1.27	8.49	1.56
201-300	Unweighted	9.77	15.61	77.85	1.24	1.28	1.15	12.44	0.03	87.62	1.25	10.16	0.98
301-400	Unweighted	26.02	0.00	60.21	1.07	1.10	0.80	13.79	0.02	86.23	0.60	12.52	0.65
401-500	Unweighted	13.57	20.15	69.17	2.63	2.66	2.24	17.33	0.02	82.74	1.80	13.58	1.87
500 & OVER	Unweighted	9.99	4.39	76.33	0.91	1.04	0.90	13.84	0.02	86.33	3.68	9.29	0.70
0-100	Weighted	16.22	7.68	68.98	5.08	5.55	4.64	15.38	0.00	85.20	1.47	9.61	3.71
101-200	Weighted	24.90	5.26	63.71	2.41	2.86	2.00	11.74	0.00	88.61	1.25	8.56	1.57
201-300	Weighted	10.32	15.50	77.22	1.31	1.34	1.20	12.51	0.00	87.54	1.17	10.27	1.02
301-400	Weighted	25.89	0.00	60.30	1.07	1.10	0.80	13.82	0.00	86.19	0.60	12.55	0.65
401-500	Weighted	13.38	20.04	69.67	2.60	2.63	2.22	17.02	0.00	83.05	1.77	13.32	1.86
500 & OVER	Weighted	10.05	4.51	76.30	0.92	1.05	0.91	13.81	0.00	86.35	3.65	9.29	0.71

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	30.65	3.00	54.90	6.71	6.78	4.68	14.85	0.04	85.55	1.86	8.52	4.07
11TH-20TH	Unweighted	11.50	4.66	62.59	15.12	15.53	13.78	26.65	0.02	74.08	1.77	12.82	11.33
21ST-30TH	Unweighted	22.63	0.41	63.40	6.11	7.18	5.52	14.89	0.02	86.02	0.91	8.93	4.14
31ST-40TH	Unweighted	18.90	8.98	66.69	5.67	5.70	4.54	14.46	0.02	85.59	0.54	9.86	4.01
41ST-50TH	Unweighted	16.69	4.16	66.57	5.84	6.34	5.23	17.16	0.02	83.26	2.44	10.16	4.15
51TH & UP	Unweighted	17.94	10.08	67.24	4.61	4.87	3.96	15.07	0.02	85.19	0.82	10.73	3.26
0TH-10TH	Weighted	22.42	11.30	67.81	1.98	2.16	1.62	10.47	0.00	90.23	1.14	7.25	1.37
11TH-20TH	Weighted	8.85	10.81	80.38	2.82	3.52	3.06	12.06	0.00	89.22	1.12	7.32	2.34
21ST-30TH	Weighted	20.49	1.16	63.90	6.72	7.32	5.69	16.22	0.00	84.39	0.65	10.34	4.62
31ST-40TH	Weighted	17.30	19.99	71.16	3.59	3.62	2.95	11.59	0.00	88.45	0.53	8.36	2.65
41ST-50TH	Weighted	16.18	4.86	68.42	2.92	3.24	2.66	15.66	0.00	84.60	2.75	10.58	2.06
51TH & UP	Weighted	18.11	10.40	68.32	3.23	3.57	2.86	13.88	0.00	86.43	0.79	10.48	2.29

Hydro

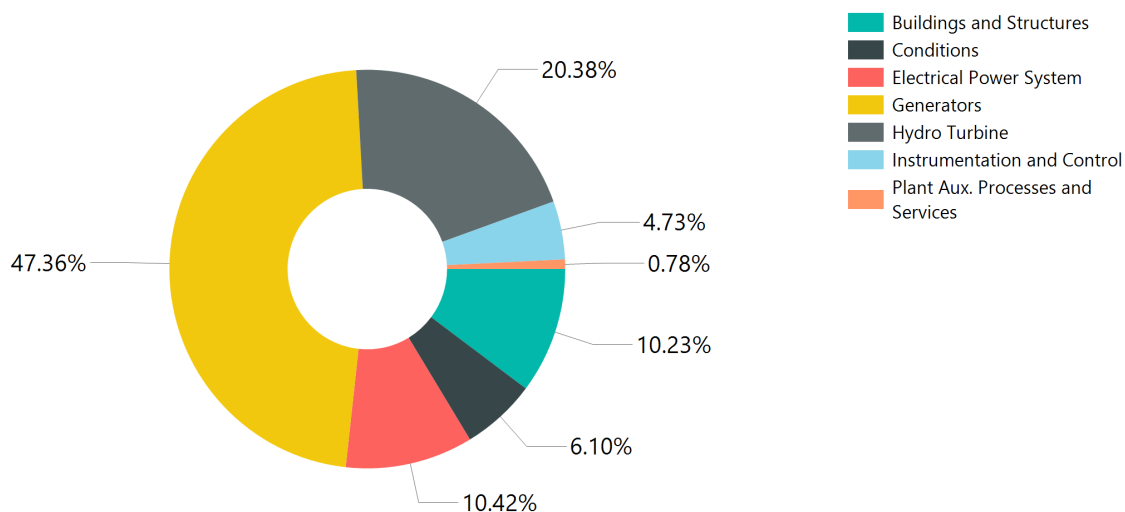
(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	0.00	0.12	2.29	89.79	89.77	59.01	69.83	0.15	30.21	3.67	31.33	34.79
11-20	Unweighted	0.01	0.83	16.23	42.35	42.49	17.48	39.32	0.07	60.78	1.36	25.68	12.18
21-30	Unweighted	0.00	1.04	26.01	23.69	24.16	10.83	26.16	0.06	74.40	1.63	15.79	8.18
31-40	Unweighted	0.00	1.58	36.12	10.95	12.25	6.98	25.24	0.05	75.37	2.68	17.39	4.57
41-50	Unweighted	0.00	2.89	46.41	8.31	8.45	5.56	21.81	0.03	78.58	1.31	15.80	4.31
51-60	Unweighted	0.00	3.43	56.38	4.91	5.77	3.99	15.13	0.03	85.54	1.74	9.79	2.93
61-70	Unweighted	0.00	4.81	66.13	2.77	3.06	2.44	13.63	0.02	86.68	1.41	10.03	1.89
71-80	Unweighted	0.00	6.23	76.21	2.24	2.67	2.37	10.73	0.02	89.65	1.42	7.18	1.75
81-90	Unweighted	0.00	7.73	86.31	1.09	1.48	1.41	7.79	0.02	92.74	1.38	4.94	0.95
91-100	Unweighted	0.00	10.57	96.06	0.40	0.82	0.81	3.02	0.01	97.55	0.55	1.50	0.39
0-10	Weighted	0.00	0.13	3.14	84.40	84.38	49.85	68.20	0.00	31.85	4.42	39.61	24.12
11-20	Weighted	0.00	0.93	16.64	38.51	38.67	14.78	36.65	0.00	63.46	1.27	24.80	10.47
21-30	Weighted	0.00	1.43	26.09	16.02	17.51	7.49	26.62	0.00	74.24	2.63	18.11	5.01
31-40	Weighted	0.00	2.77	37.06	5.10	7.25	4.21	28.04	0.00	72.86	1.48	23.66	2.00
41-50	Weighted	0.00	5.52	46.63	5.57	5.67	3.55	18.08	0.00	82.10	1.41	13.72	2.77
51-60	Weighted	0.00	5.69	56.52	3.67	3.96	2.79	14.20	0.00	86.12	2.64	9.08	2.16
61-70	Weighted	0.00	8.22	65.94	2.37	2.70	2.14	13.22	0.00	87.11	1.47	9.82	1.61
71-80	Weighted	0.00	11.35	76.16	2.32	2.62	2.36	13.34	0.00	86.93	1.80	9.45	1.81
81-90	Weighted	0.00	7.86	86.81	0.91	1.05	1.00	9.05	0.00	91.20	2.16	5.84	0.80
91-100	Weighted	0.00	14.34	95.36	0.41	0.60	0.59	3.63	0.00	96.74	0.64	2.22	0.40
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		19.36	5.52	64.89	6.10	6.55	5.23	16.20	2.00	84.25	1.46	10.04	4.25
Weighted		17.15	8.33	68.92	3.15	3.47	2.81	14.29	0.02	86.06	1.73	9.96	2.25

Hydro

(Major Component Outage Report - 2021 -2025)

Major Component Contribution to Hydro Units 2021 -2025



Major Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Buildings and Structures	327	0.14	889	0.02	789	0.03	1,503	0.28	869	1.27	1.74	0.20	0.24
Conditions	1,842	0.45	7,450	0.00	1,533	0.00	576	0.17	1,127	0.41	1.04	0.65	0.65
Electrical Power System	754	0.32	596	0.03	330	0.00	1,167	0.19	755	1.23	1.78	0.46	0.50
Generators	1,985	2.24	1,670	0.07	4,525	0.02	2,716	0.55	2,741	5.19	8.08	3.22	3.33
Hydro Turbine	1,416	1.21	324	0.13	484	0.01	717	0.29	847	1.83	3.48	1.74	1.93
Instrumentation and Control	1,035	0.28	176	0.01	1,230	0.06	987	0.12	389	0.34	0.81	0.41	0.41
Plant Aux. Processes and Services	164	0.05	7	0.00	1	0.00	129	0.02	83	0.07	0.13	0.07	0.07
Total (Ext. Causes Excluded)	5681	4.25	3662	0.27	7359	0.27	7219	1.45	5684	9.92	16.02	6.10	6.48
Total (Ext. Causes Included)	7523	4.70	11112	0.27	8892	0.13	7795	1.63	6811	10.34	17.06	6.75	7.13

Hydro

(Detailed Component Outage Report - 2021 -2025)

Buildings and Structures : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Headgates	76	0.04	28	0.00	85	0.00	353	0.03	113	0.35	0.42	0.05	0.05
Penstock	14	0.02	1	0.00	1	0.00	51	0.01	75	0.23	0.26	0.03	0.03
Trash Racks And Followers	78	0.01	238	0.00	311	0.00	394	0.12	137	0.03	0.17	0.02	0.02
Water And Earth Retaining Structures	3	0.00	133	0.00	8	0.00	107	0.01	16	0.15	0.17	0.00	0.00
Powerhouse Substructure	18	0.00	0	0.00	6	0.00	100	0.01	104	0.12	0.13	0.01	0.01
Intake Structures Or Control Structures	44	0.02	99	0.00	36	0.00	55	0.01	159	0.08	0.12	0.03	0.03
Scroll Case (Concrete)	1	0.00	0	0.00	4	0.00	19	0.02	5	0.04	0.06	0.00	0.00
Intake (Headrace) Channel	2	0.00	6	0.00	11	0.00	21	0.01	57	0.05	0.06	0.00	0.00
Tailrace (Channel)	16	0.00	7	0.00	42	0.00	170	0.00	32	0.05	0.05	0.00	0.00
Sluiceway And Spillway (Concrete)	1	0.00	168	0.01	117	0.02	36	0.00	15	0.02	0.05	0.00	0.01

Hydro

(Detailed Component Outage Report - 2021 -2025)

Conditions : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Other	962	0.21	7,231	0.00	1,290	0.00	225	0.11	748	0.29	0.60	0.30	0.30
Site Environment, Storms, Floods	199	0.10	32	0.00	2	0.00	10	0.01	0	0.00	0.11	0.14	0.14
Transmission Limitations	339	0.03	21	0.00	7	0.00	51	0.02	56	0.03	0.09	0.05	0.05
Regulatory Bodies	17	0.03	38	0.00	81	0.00	72	0.01	109	0.02	0.06	0.05	0.05
Powerhouse substation (non-Generating Unit equipment)	23	0.00	0	0.00	39	0.00	28	0.01	39	0.03	0.05	0.00	0.00
Transmission Line (connected to powerhouse substation)	110	0.00	1	0.00	1	0.00	124	0.01	87	0.04	0.05	0.00	0.00
Transmission Equipment (beyond transmission line)	111	0.03	0	0.00	6	0.00	13	0.00	6	0.00	0.04	0.05	0.05
Upstream Water Conditions	20	0.01	72	0.00	43	0.00	16	0.01	36	0.00	0.02	0.02	0.02
Fire, General	38	0.02	1	0.00	0	0.00	3	0.00	13	0.00	0.02	0.03	0.03
Downstream Water Conditions	5	0.00	22	0.00	55	0.00	28	0.00	33	0.00	0.01	0.01	0.01

Hydro

(Detailed Component Outage Report - 2021 -2025)

Electrical Power System : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator Power Transformers	169	0.12	55	0.00	160	0.00	241	0.09	308	0.52	0.74	0.18	0.18
Output System Generator Voltage	48	0.01	4	0.00	20	0.00	85	0.01	102	0.29	0.31	0.02	0.02
Circuit Breakers - Generator Voltage	215	0.07	476	0.03	42	0.00	151	0.03	53	0.06	0.18	0.10	0.13
Switching Equipment - Generator Voltage	59	0.04	6	0.00	48	0.00	142	0.00	62	0.11	0.16	0.06	0.06
12-15 Kilovolt Distribution System	0	0.00	0	0.00	0	0.00	0	0.00	5	0.10	0.10	0.00	0.00
Disconnect Switches - Generator Voltage	21	0.00	3	0.00	0	0.00	46	0.01	60	0.05	0.06	0.00	0.00
Bus Duct, Bus, Cable	73	0.01	12	0.00	10	0.00	116	0.02	50	0.04	0.06	0.01	0.01
Direct Current Power Supplies	32	0.01	14	0.00	7	0.00	184	0.01	14	0.02	0.04	0.02	0.02
Station Service Transformer	23	0.02	2	0.00	0	0.00	24	0.01	11	0.00	0.03	0.03	0.03
Generator Voltage Supply System	12	0.00	2	0.00	16	0.00	27	0.00	11	0.02	0.03	0.00	0.00

Hydro

(Detailed Component Outage Report - 2021 -2025)

Generators : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generators	826	0.40	476	0.03	4,379	0.02	1116	0.29	2054	4.34	5.08	0.57	0.62
Generator Rotor	24	0.38	194	0.00	4	0.00	20	0.04	21	0.03	0.45	0.55	0.55
Brushes And Brush Rigging	61	0.01	3	0.00	21	0.00	841	0.09	134	0.28	0.39	0.02	0.02
Generator Stator Winding	31	0.21	27	0.00	5	0.00	7	0.01	44	0.13	0.35	0.30	0.30
Thrust And Guide Bearings	169	0.22	431	0.02	13	0.00	34	0.00	21	0.07	0.32	0.32	0.35
Thrust Bearing	53	0.28	82	0.00	0	0.00	9	0.00	4	0.02	0.31	0.40	0.40
Excitation	270	0.05	247	0.00	57	0.00	181	0.01	181	0.15	0.21	0.08	0.08
Field Breaker	46	0.14	0	0.00	0	0.00	8	0.00	1	0.00	0.14	0.20	0.20
Bearing Oil Cooling System	51	0.11	0	0.00	0	0.00	37	0.02	4	0.00	0.13	0.16	0.16
Pole Windings And Connections	22	0.12	30	0.00	2	0.00	5	0.00	3	0.00	0.13	0.17	0.18

Hydro

(Detailed Component Outage Report - 2021 -2025)

Hydro Turbine : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Turbines	179	0.16	54	0.02	102	0.00	189	0.15	478	1.21	1.54	0.24	0.26
Governor System	338	0.26	48	0.00	122	0.00	122	0.02	112	0.10	0.38	0.37	0.37
Turbine Guide Bearing	68	0.26	39	0.01	1	0.00	39	0.03	15	0.05	0.35	0.37	0.39
Runner	6	0.06	2	0.00	158	0.00	12	0.03	34	0.15	0.25	0.09	0.09
Wicket Linkage (Including Shear Pin)	218	0.04	34	0.00	8	0.00	33	0.00	8	0.08	0.12	0.06	0.06
Governor	107	0.03	9	0.00	29	0.00	82	0.01	71	0.07	0.11	0.04	0.04
Speed Detection	30	0.10	0	0.00	0	0.00	8	0.00	4	0.00	0.10	0.14	0.14
Inlet Valve	41	0.01	18	0.00	15	0.00	42	0.01	43	0.07	0.09	0.02	0.02
Blades	2	0.00	11	0.08	0	0.00	1	0.00	4	0.01	0.08	0.00	0.11
Draft Tube Liner	5	0.07	0	0.00	16	0.00	2	0.00	4	0.00	0.08	0.10	0.10

Hydro

(Detailed Component Outage Report - 2021 -2025)

Instrumentation and Control : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator And Auxiliaries -	281	0.08	35	0.00	96	0.04	227	0.08	120	0.07	0.27	0.12	0.12
Hydraulic Turbine And Auxiliaries - Instruments & Control	36	0.00	3	0.00	0	0.00	13	0.00	15	0.12	0.12	0.00	0.00
Supervisory Control & Data Acquisition -	71	0.01	77	0.00	265	0.03	284	0.01	17	0.03	0.08	0.01	0.01
Plant Auxiliary Processes And Services - Instruments & Control	62	0.07	6	0.00	640	0.00	34	0.00	27	0.00	0.07	0.10	0.10
Governor Oil System - Instruments And	35	0.05	0	0.00	1	0.00	21	0.00	1	0.00	0.05	0.07	0.07
Electrical Power Systems - Instruments & Controls	1	0.00	0	0.00	0	0.00	4	0.00	2	0.03	0.03	0.00	0.00
Telecom and Communications	85	0.01	1	0.00	18	0.00	72	0.00	66	0.02	0.03	0.01	0.01
Excitation Instrumentation & Control	72	0.01	1	0.00	10	0.00	45	0.00	38	0.02	0.03	0.01	0.01
Station Service Power Distribution - Instruments & Control	14	0.00	0	0.00	1	0.00	35	0.01	16	0.02	0.03	0.01	0.01
Generator Thrust Bearing - Instruments	12	0.02	1	0.00	1	0.00	3	0.00	0	0.00	0.02	0.03	0.03

Hydro

(Detailed Component Outage Report - 2021 -2025)

Plant Aux. Processes and Services : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Cooling Water Systems	105	0.04	1	0.00	1	0.00	50	0.01	29	0.04	0.09	0.06	0.06
Fire Protection Water System	25	0.01	1	0.00	0	0.00	47	0.00	52	0.03	0.04	0.01	0.01
Compressed Air To Brakes & Governor	18	0.00	2	0.00	0	0.00	16	0.00	0	0.00	0.00	0.00	0.00
Fire Protection System	5	0.00	0	0.00	0	0.00	5	0.00	0	0.00	0.00	0.00	0.00
Turbine Dewatering & Rewatering Piping System	2	0.00	0	0.00	0	0.00	10	0.00	2	0.00	0.00	0.00	0.00
Fixed Fire Protection CO2 & Halon System	5	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Sturgeon Exclusion Screen System	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Water Depressing System	3	0.00	3	0.00	0	0.00	1	0.00	0	0.00	0.00	0.00	0.00

Generating Unit Thermal



Thermal

(External Causes excluded - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
60-99	2.00	4.00	0.06	295.00	122.55	0.5754	31.00	31.00
100-199	15.48	71.00	0.55	1018.32	68.30	4.6818	189.00	188.00
300-399	7.00	48.00	0.44	933.42	80.25	1.9953	66.00	65.00
400-599	0.99	1.00	0.02	164.43	164.43	0.2916	2.00	2.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
11TH-20TH	1.00	7.00	0.02	68.13	18.81	0.1260	20.00	20.00
21ST-30TH	1.00	3.00	0.01	52.18	23.18	0.3079	8.00	8.00
31ST-40TH	2.98	8.00	0.16	933.42	178.62	0.6936	16.00	16.00
41ST-50TH	16.86	96.00	0.70	1018.32	63.69	5.1095	225.00	223.00
51TH & UP	4.63	17.00	0.20	805.52	102.55	1.4330	35.00	35.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
11-20	2.90	11.00	0.17	384.00	138.52	1.5225	19.00	19.00
21-30	3.65	9.00	0.19	805.52	184.27	1.0523	25.00	25.00
41-50	2.00	14.00	0.17	1018.32	104.95	1.1556	26.00	26.00
51-60	1.99	7.00	0.04	181.33	46.89	0.6482	35.00	35.00
61-70	4.00	15.00	0.05	109.82	28.94	0.8238	75.00	75.00
71-80	8.95	56.00	0.38	933.42	59.62	1.9490	94.00	92.00
81-90	2.00	14.00	0.07	222.20	41.16	0.3499	27.00	27.00
91-100	1.00	5.00	0.02	88.58	31.78	0.1686	7.00	7.00
Total	26.47	131.00	1.08	1018.32	72.43	7.6700	308.00	306.00

Thermal

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
60-99	Unweighted	30.62	0.00	40.65	6.44	6.53	4.33	28.77	0.04	71.27	0.05	16.91	2.80
100-199	Unweighted	14.45	0.00	58.11	5.36	7.84	6.52	29.26	0.07	72.56	0.00	22.08	3.46
300-399	Unweighted	19.22	0.00	56.81	9.96	13.69	10.96	28.50	0.10	76.04	0.00	17.57	6.28
400-599	Unweighted	0.00	0.00	71.99	2.54	3.35	3.23	29.16	0.02	71.99	0.00	26.13	1.88
60-99	Weighted	29.95	0.00	41.81	6.18	6.28	4.23	28.28	0.00	71.76	0.00	16.57	2.75
100-199	Weighted	13.52	0.00	58.74	5.14	7.67	6.41	29.54	0.00	72.26	0.00	22.50	3.30
300-399	Weighted	20.47	0.00	55.07	10.10	13.85	10.87	28.90	0.00	75.54	0.00	18.17	6.18
400-599	Weighted	0.00	0.00	71.99	2.54	3.35	3.23	29.16	0.00	71.99	0.00	26.13	1.88

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
11TH-20TH	Unweighted	1.48	0.00	85.92	1.71	1.71	1.69	0.14	0.08	87.40	0.76	0.12	1.50
21ST-30TH	Unweighted	0.22	0.00	69.01	1.14	1.16	1.15	0.35	0.05	69.22	4.02	0.30	0.79
31ST-40TH	Unweighted	3.42	0.00	74.47	6.80	7.34	7.09	0.09	0.04	77.89	0.73	0.06	5.44
41ST-50TH	Unweighted	17.37	0.00	55.65	6.79	10.20	8.34	0.02	0.09	73.02	1.73	0.01	4.11
51TH & UP	Unweighted	24.24	0.00	48.45	6.69	8.87	7.02	0.07	0.08	72.69	2.73	0.05	3.98
11TH-20TH	Weighted	1.48	0.00	85.92	1.71	1.71	1.69	0.00	0.00	87.40	0.76	0.00	1.50
21ST-30TH	Weighted	0.22	0.00	69.01	1.14	1.16	1.15	0.00	0.00	69.22	4.02	0.00	0.79
31ST-40TH	Weighted	1.87	0.00	74.18	6.57	7.23	7.09	0.00	0.00	76.05	0.38	0.00	5.22
41ST-50TH	Weighted	19.60	0.00	53.82	7.59	11.44	9.13	0.00	0.00	73.42	1.14	0.00	4.46
51TH & UP	Weighted	19.61	0.00	52.64	5.89	8.03	6.50	0.00	0.00	72.26	2.16	0.00	3.64

Thermal

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
11-20	Unweighted	32.13	0.00	19.30	20.28	25.22	15.66	50.75	0.10	51.44	0.29	42.47	5.80
21-30	Unweighted	47.94	0.00	27.08	11.65	14.09	10.24	26.31	0.05	75.02	2.61	17.63	4.73
41-50	Unweighted	4.06	0.00	44.71	15.74	27.48	26.00	57.78	0.17	48.77	3.14	39.71	8.39
51-60	Unweighted	16.53	0.00	53.33	3.35	6.95	3.95	32.41	0.07	69.86	4.34	23.92	1.87
61-70	Unweighted	12.29	0.00	67.76	1.80	2.73	2.52	20.59	0.05	80.05	3.07	15.64	1.24
71-80	Unweighted	5.39	0.00	74.66	5.36	6.95	6.65	21.66	0.08	80.04	1.17	14.55	4.23
81-90	Unweighted	0.74	0.00	85.09	3.72	4.86	4.84	17.50	0.08	85.83	0.38	10.50	3.29
91-100	Unweighted	0.00	0.00	91.19	1.95	3.62	3.39	16.86	0.05	91.19	0.08	6.91	1.81
11-20	Weighted	36.55	0.00	19.01	20.06	25.61	14.53	46.82	0.00	55.56	0.15	39.05	5.23
21-30	Weighted	47.42	0.00	28.54	12.58	14.93	10.71	25.52	0.00	75.97	1.30	17.88	4.85
41-50	Weighted	4.02	0.00	44.71	15.84	27.69	26.22	57.89	0.00	48.73	3.13	39.69	8.45
51-60	Weighted	15.12	0.00	52.74	3.22	7.72	4.14	34.99	0.00	67.85	3.47	26.90	1.78
61-70	Weighted	11.92	0.00	67.83	1.76	2.65	2.44	20.86	0.00	79.75	3.10	15.94	1.21
71-80	Weighted	4.21	0.00	74.62	6.12	8.19	7.91	23.25	0.00	78.82	0.79	15.52	4.87
81-90	Weighted	0.20	0.00	84.48	5.17	7.14	7.13	21.10	0.00	84.67	0.10	10.62	4.60
91-100	Weighted	0.00	0.00	91.19	1.95	3.62	3.39	16.86	0.00	91.19	0.08	6.91	1.81
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		16.42	0.00	56.95	6.53	9.15	7.50	29.02	6.69	73.37	1.89	20.63	4.11
Weighted		15.79	0.00	57.82	6.92	9.72	7.98	29.19	0.03	73.61	1.22	20.79	4.38

Thermal

(External Causes excluded - 2021 - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
60-99	10.40	62.00	0.43	492.08	61.25	3.10	149.00	148.00
100-199	82.35	420.00	3.25	2399.98	67.85	20.07	952.00	942.00
200-299	1.99	14.00	0.06	210.67	35.94	0.52	294.00	294.00
300-399	34.20	181.00	1.48	1008.50	71.85	10.41	278.00	276.00
400-599	21.88	117.00	0.52	358.67	39.17	3.44	468.00	463.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	2.95	24.00	0.05	99.57	19.96	0.51	151.00	150.00
11TH-20TH	2.00	14.00	0.06	408.32	39.48	0.29	62.00	62.00
21ST-30TH	11.85	75.00	0.59	358.67	68.33	3.16	90.00	90.00
31ST-40TH	27.49	148.00	0.66	933.42	39.21	5.22	629.00	622.00
41ST-50TH	88.14	481.00	3.83	2399.98	69.76	23.91	1217.00	1210.00
51TH & UP	23.35	90.00	0.67	805.52	65.57	5.25	186.00	182.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	12.40	44.00	0.20	254.47	39.62	2.34	314.00	314.00
11-20	9.90	33.00	0.30	384.00	78.81	3.28	79.00	79.00
21-30	15.15	61.00	1.14	2399.98	163.86	5.04	281.00	280.00
31-40	5.43	20.00	0.34	946.00	149.50	1.96	40.00	39.00
41-50	10.85	59.00	0.55	1191.47	81.17	3.51	247.00	246.00
51-60	20.41	105.00	0.72	492.08	59.98	5.02	320.00	317.00
61-70	22.16	125.00	0.56	552.38	39.40	5.44	406.00	400.00
71-80	30.10	200.00	1.25	1008.50	54.86	6.58	409.00	406.00
81-90	22.48	154.00	0.73	722.33	41.70	4.47	216.00	212.00
91-100	6.90	31.00	0.08	192.17	21.98	0.71	45.00	45.00

Thermal

(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
60-99	Unweighte	14.97	0.00	55.99	6.86	7.73	6.34	29.56	0.08	70.97	8.96	15.94	4.13
100-199	Unweighted	20.64	0.99	58.34	5.82	8.79	7.45	23.16	0.07	78.98	2.35	14.92	3.75
200-299	Unweighted	45.92	0.00	38.37	6.99	7.07	3.55	26.02	0.15	84.29	2.38	10.45	2.88
300-399	Unweighted	24.47	0.00	56.27	6.90	20.11	18.50	29.89	0.08	80.74	0.61	14.39	4.26
400-599	Unweighted	37.95	0.00	47.62	4.76	6.70	3.88	15.66	0.09	85.57	0.32	11.72	2.38
60-99	Weighted	14.24	0.00	56.97	6.78	7.66	6.35	29.33	0.00	71.21	8.34	16.30	4.15
100-199	Weighted	19.85	0.97	58.94	5.87	8.85	7.53	23.32	0.00	78.79	2.29	15.13	3.79
200-299	Weighted	45.92	0.00	38.37	6.99	7.07	3.55	26.02	0.00	84.29	2.38	10.45	2.88
300-399	Weighted	26.01	0.00	54.25	7.10	20.13	18.34	29.90	0.00	80.26	0.62	14.88	4.24
400-599	Weighted	40.61	0.00	44.21	5.17	7.31	3.99	16.45	0.00	84.82	0.32	12.45	2.41

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	11.28	0.00	71.81	2.46	2.46	2.20	16.91	0.09	83.09	1.02	14.07	1.82
11TH-20TH	Unweighted	5.56	0.00	80.26	3.77	4.09	3.65	14.46	0.09	85.82	1.59	9.45	3.15
21ST-30TH	Unweighted	4.71	0.00	73.84	6.22	12.28	11.99	26.52	0.08	78.55	0.92	15.63	4.90
31ST-40TH	Unweighted	14.88	0.00	73.57	2.99	8.75	8.35	18.09	0.06	88.45	1.28	7.98	2.29
41ST-50TH	Unweighted	27.56	0.92	48.97	7.71	11.81	9.32	26.35	0.09	76.53	1.64	17.61	4.22
51TH & UP	Unweighted	30.18	0.09	52.33	4.74	10.88	9.95	21.52	0.06	82.51	5.52	9.21	2.76
0TH-10TH	Weighted	11.28	0.00	71.81	2.46	2.46	2.20	16.91	0.00	83.09	1.02	14.07	1.82
11TH-20TH	Weighted	5.56	0.00	80.26	3.77	4.09	3.65	14.46	0.00	85.82	1.59	9.45	3.15
21ST-30TH	Weighted	4.27	0.00	72.30	7.68	13.85	13.52	28.70	0.00	76.57	0.55	16.86	6.01
31ST-40TH	Weighted	13.76	0.00	75.62	2.99	9.12	8.73	17.66	0.00	89.38	0.93	7.33	2.36
41ST-50TH	Weighted	36.67	0.58	41.36	8.02	13.61	10.01	25.33	0.00	78.03	1.17	17.12	3.68
51TH & UP	Weighted	30.39	0.12	53.38	4.35	11.18	10.38	20.63	0.00	83.78	4.71	8.94	2.58

Thermal

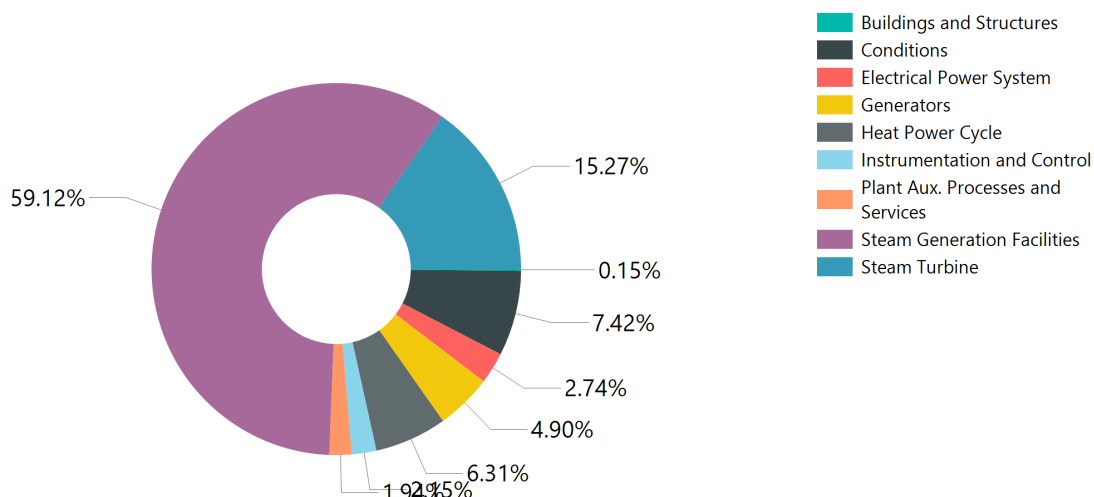
(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	0.07	0.00	5.47	10.68	16.83	6.93	17.52	0.38	83.53	2.08	12.90	1.49
11-20	Unweighted	0.06	0.00	17.28	13.93	16.85	9.34	32.72	0.15	68.25	1.22	27.57	2.97
21-30	Unweighted	0.03	2.57	26.23	20.16	21.77	12.21	31.70	0.11	69.55	2.33	20.94	7.18
31-40	Unweighted	0.07	5.70	35.98	11.70	25.58	23.97	32.98	0.09	73.86	6.36	14.05	5.74
41-50	Unweighted	0.03	0.00	46.68	9.63	12.61	9.94	32.05	0.12	71.76	2.95	20.29	5.00
51-60	Unweighted	0.01	0.50	55.49	5.79	7.14	5.62	23.92	0.07	77.01	2.86	16.70	3.43
61-70	Unweighted	0.01	0.00	68.18	3.41	8.69	8.28	23.70	0.06	80.75	2.68	14.12	2.45
71-80	Unweighted	0.00	0.03	75.53	5.02	9.62	9.27	21.22	0.08	83.56	1.53	10.88	4.04
81-90	Unweighted	0.00	0.00	86.34	3.57	10.25	10.17	19.54	0.08	87.95	0.86	7.98	3.21
91-100	Unweighted	0.00	0.00	95.38	1.15	6.34	6.34	10.17	0.05	95.81	0.26	2.82	1.11
0-10	Weighted	0.00	0.00	5.24	16.08	26.34	5.62	18.00	0.00	83.19	0.58	14.91	1.32
11-20	Weighted	0.00	0.00	17.30	14.19	17.41	9.29	33.55	0.00	67.54	0.71	28.80	2.95
21-30	Weighted	0.00	1.80	25.96	19.63	21.04	11.44	31.00	0.00	70.18	2.13	21.10	6.59
31-40	Weighted	0.00	5.51	36.03	12.05	25.30	23.55	33.00	0.00	73.59	6.16	14.29	5.96
41-50	Weighted	0.00	0.00	46.42	10.12	13.46	10.67	33.05	0.00	71.34	2.60	20.80	5.25
51-60	Weighted	0.00	0.35	55.61	5.75	6.94	5.46	21.96	0.00	78.87	1.73	15.99	3.40
61-70	Weighted	0.00	0.00	68.92	3.14	11.90	11.56	25.13	0.00	82.50	2.34	12.86	2.30
71-80	Weighted	0.00	0.01	75.54	6.21	12.57	12.20	24.09	0.00	82.71	0.99	11.23	5.08
81-90	Weighted	0.00	0.00	86.83	3.63	11.10	10.98	20.01	0.00	88.71	0.75	7.26	3.28
91-100	Weighted	0.00	0.00	95.60	1.16	5.68	5.68	9.35	0.00	96.04	0.21	2.62	1.13
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		23.87	0.55	55.95	6.02	11.01	9.34	24.08	6.85	79.83	2.12	14.36	3.69
Weighted		27.91	0.35	52.94	6.14	12.09	9.99	23.59	0.03	80.85	1.36	14.25	3.53

Thermal

(Major Component Outage Report - 2021 -2025)

Major Component Contribution to Thermal Units 2021 -2025



Major Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Buildings and Structures	2	0.00	3	0.00	0	0.00	6	0.03	0	0.00	0.04	0.01	0.01
Conditions	101	1.57	433	0.16	65	0.00	12	0.04	4	0.04	1.81	2.55	2.80
Electrical Power System	48	0.18	41	0.02	6	0.01	10	0.06	10	0.39	0.67	0.29	0.32
Generators	34	0.12	27	0.04	11	0.00	31	0.13	21	0.90	1.19	0.20	0.26
Heat Power Cycle	94	0.29	235	0.39	24	0.09	67	0.47	10	0.30	1.54	0.47	1.10
Instrumentation and Control	169	0.14	138	0.07	51	0.09	11	0.03	4	0.18	0.52	0.23	0.34
Plant Aux. Processes and Services	43	0.09	145	0.23	18	0.02	13	0.11	2	0.02	0.47	0.14	0.52
Steam Generation Facilities	342	1.98	1,030	0.95	425	0.43	114	1.06	170	9.99	14.41	3.20	4.73
Steam Turbine	86	0.82	125	0.21	10	0.00	22	0.18	33	2.51	3.72	1.33	1.67
Total (Ext. Causes Excluded)	818	3.62	1744	1.92	545	1.92	274	2.08	250	14.29	22.57	5.87	8.95
Total (Ext. Causes Included)	919	5.20	2177	2.08	610	0.65	286	2.11	254	14.33	24.37	8.42	11.75

Thermal

(Detailed Component Outage Report - 2021 -2025)

Buildings and Structures : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Chimney	0	0.00	0	0.00	0	0.00	3	0.02	0	0.00	0.02	0.00	0.00
Biomass Material Handling Structures	2	0.00	3	0.00	0	0.00	3	0.01	0	0.00	0.01	0.01	0.01

Thermal

(Detailed Component Outage Report - 2021 -2025)

Conditions : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Site Environment, Storms, Floods	16	0.88	10	0.00	0	0.00	1	0.00	0	0.00	0.88	1.43	1.43
Cooling Water Discharge - Thermal Effects	3	0.48	16	0.00	0	0.00	3	0.01	0	0.00	0.48	0.77	0.77
Other	41	0.15	57	0.00	1	0.00	5	0.02	0	0.00	0.17	0.24	0.24
Fuel Supply Problems	1	0.01	26	0.07	2	0.00	0	0.00	0	0.00	0.08	0.01	0.12
Wet Coal	3	0.00	94	0.07	0	0.00	0	0.00	0	0.00	0.07	0.00	0.11
Staff Shortage	0	0.00	1	0.00	0	0.00	0	0.00	2	0.02	0.02	0.00	0.00
Powerhouse substation	11	0.02	0	0.00	0	0.00	0	0.00	0	0.00	0.02	0.03	0.03
Solid Waste Effluents	1	0.01	0	0.00	0	0.00	0	0.00	0	0.00	0.01	0.02	0.02
Transmission Line	3	0.00	2	0.00	0	0.00	0	0.00	1	0.01	0.01	0.01	0.01
Frozen coal	2	0.00	16	0.01	0	0.00	0	0.00	0	0.00	0.01	0.00	0.01

Thermal

(Detailed Component Outage Report - 2021 -2025)

Electrical Power System : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Output System Generator Voltage Equipment	8	0.03	1	0.01	4	0.00	0	0.00	1	0.22	0.26	0.04	0.06
Generator Power Transformers	3	0.01	13	0.00	0	0.00	5	0.04	2	0.11	0.16	0.02	0.02
Unit Service Transformer	3	0.09	13	0.00	2	0.01	1	0.02	3	0.03	0.15	0.14	0.14
Station Service Transformer	3	0.00	1	0.00	0	0.00	1	0.00	2	0.02	0.02	0.00	0.00
Circuit Breakers- Generator Voltage	6	0.02	0	0.00	0	0.00	2	0.00	0	0.00	0.02	0.03	0.03
Disconnect Switches- Generator Voltage	4	0.01	0	0.00	0	0.00	0	0.00	1	0.01	0.02	0.01	0.01
Exciter XFMR	4	0.01	3	0.00	0	0.00	0	0.00	1	0.01	0.02	0.01	0.01
Station Service Power Distribution	10	0.01	5	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.02
Direct Current Power Supplies	1	0.01	1	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01
Switching Equipment- Generator Voltage	3	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.01	0.00	0.01

Thermal

(Detailed Component Outage Report - 2021 -2025)

Generators : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator	15	0.03	2	0.00	9	0.00	5	0.04	16	0.80	0.87	0.06	0.06
Generator Hydrogen Seals	1	0.02	3	0.02	0	0.00	0	0.00	1	0.03	0.06	0.03	0.06
Excitation Systems Equipment	12	0.05	7	0.00	2	0.00	0	0.00	0	0.00	0.05	0.09	0.09
Generator Rotor	1	0.00	0	0.00	0	0.00	0	0.00	2	0.05	0.05	0.00	0.00
Generator Collector And Brushes	1	0.00	2	0.00	0	0.00	21	0.05	0	0.00	0.05	0.00	0.00
Hydrogen Gas Cooling System	3	0.01	6	0.00	0	0.00	2	0.01	2	0.02	0.04	0.02	0.02
Generator Bearings	0	0.00	3	0.01	0	0.00	2	0.03	0	0.00	0.04	0.00	0.01
Seal Oil System	0	0.00	2	0.01	0	0.00	1	0.01	0	0.00	0.01	0.00	0.01
Generator Liquid Cooling System	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Generator Stator	0	0.00	2	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Thermal

(Detailed Component Outage Report - 2021 -2025)

Heat Power Cycle : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Boiler Feed Pumps And Auxiliaries	18	0.04	63	0.15	3	0.01	15	0.18	0	0.00	0.38	0.07	0.31
Condensor Tubes	10	0.05	11	0.01	12	0.01	21	0.12	4	0.19	0.38	0.08	0.09
High Pressure Feedwater Heaters And	11	0.08	70	0.09	1	0.00	13	0.05	1	0.03	0.26	0.13	0.28
Condensor	16	0.01	31	0.07	4	0.06	10	0.06	3	0.04	0.25	0.02	0.13
Feed Cycle Auxiliary Systems	11	0.03	11	0.02	0	0.00	1	0.01	0	0.00	0.06	0.05	0.09
Boiler Feedwater Piping And Supports	6	0.03	0	0.00	0	0.00	2	0.00	1	0.02	0.05	0.06	0.06
Feedwater Heater Drains System	0	0.00	5	0.01	0	0.00	2	0.03	0	0.00	0.05	0.00	0.02
Boiler Feed Pump Motors And Auxiliaries	2	0.00	13	0.02	0	0.00	0	0.00	1	0.01	0.03	0.00	0.03
Condensate Extraction Pumps And	6	0.01	3	0.00	1	0.00	0	0.00	0	0.00	0.01	0.02	0.02
Deaerator, Storage Tank, And Auxiliaries	5	0.01	2	0.00	0	0.00	0	0.00	0	0.00	0.01	0.02	0.02

Thermal

(Detailed Component Outage Report - 2021 -2025)

Instrumentation and Control : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Computers	4	0.00	1	0.00	0	0.00	2	0.00	2	0.17	0.18	0.01	0.01
Main Power Output Systems - Control and Protection	6	0.01	0	0.00	3	0.07	0	0.00	0	0.00	0.08	0.01	0.01
Steam Turbine And Auxiliaries -	46	0.06	8	0.01	15	0.01	3	0.01	0	0.00	0.08	0.09	0.11
Boiler Feedwater System - Instrumentation and Control	21	0.01	25	0.03	1	0.00	5	0.02	0	0.00	0.07	0.02	0.07
Steam Generator Controls	32	0.02	39	0.01	20	0.01	0	0.00	0	0.00	0.03	0.03	0.04
Ignition Fuel,Fuel Gas, & Miscellaneous	20	0.01	42	0.01	9	0.00	0	0.00	0	0.00	0.02	0.02	0.03
Alternating Current Power Distribution - Control and Protection	3	0.01	2	0.00	0	0.00	0	0.00	0	0.00	0.02	0.02	0.03
Auxiliary Systems - Instrumentation and Control	2	0.00	4	0.00	0	0.00	1	0.00	2	0.01	0.02	0.00	0.00
Generator And Auxiliaries - Instrumentation and Control	8	0.01	1	0.00	1	0.00	0	0.00	0	0.00	0.01	0.02	0.02
Fuel Coal Management - Instrumentation and Control	9	0.00	5	0.00	1	0.01	0	0.00	0	0.00	0.01	0.00	0.00

Thermal

(Detailed Component Outage Report - 2021 -2025)

Plant Aux. Processes and Services : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Circulating Water Systems	5	0.01	12	0.05	2	0.01	8	0.07	1	0.00	0.14	0.01	0.08
Circulating Water Cooling Towers	1	0.00	73	0.10	3	0.00	0	0.00	0	0.00	0.10	0.00	0.17
Circulating Water Pumps	7	0.01	27	0.05	0	0.00	0	0.00	0	0.00	0.06	0.02	0.10
Circulating Water Pump Motors	2	0.03	5	0.02	1	0.01	0	0.00	0	0.00	0.05	0.05	0.08
Circulating Water Piping And Supports	4	0.01	3	0.00	0	0.00	1	0.00	1	0.02	0.03	0.01	0.01
Water Treatment Plant	6	0.01	13	0.01	11	0.00	1	0.00	0	0.00	0.03	0.02	0.04
Circulating Water Biological Conditions	3	0.00	5	0.00	0	0.00	1	0.02	0	0.00	0.02	0.00	0.00
Ash Transport Water Systems	1	0.01	1	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01
Travelling Water Screens	0	0.00	2	0.00	1	0.00	1	0.01	0	0.00	0.01	0.00	0.00
Service Water Systems	1	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0.01	0.00	0.00

Thermal

(Detailed Component Outage Report - 2021 -2025)

Steam Generation Facilities : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Steam Generator/HRSG	74	0.48	48	0.07	235	0.05	24	0.19	153	9.78	10.58	0.78	0.89
Waterwalls	50	0.38	9	0.00	0	0.00	5	0.05	0	0.00	0.42	0.61	0.61
Pulverizers	8	0.00	128	0.08	101	0.32	0	0.00	0	0.00	0.40	0.00	0.13
Superheater/High Pressure Section	15	0.18	27	0.04	3	0.00	2	0.15	0	0.00	0.38	0.29	0.36
Air Heaters	5	0.00	60	0.27	1	0.00	7	0.05	2	0.03	0.34	0.01	0.43
Primary Air Fans - Pulverized Fuel	14	0.07	56	0.14	0	0.00	1	0.00	0	0.00	0.22	0.12	0.35
Safety Valves	5	0.02	10	0.01	41	0.03	1	0.12	3	0.02	0.19	0.02	0.04
Main Steam Piping	7	0.09	0	0.00	0	0.00	3	0.04	2	0.03	0.16	0.14	0.14
Furnace Ash Removal System	6	0.07	72	0.02	3	0.00	6	0.02	2	0.04	0.14	0.11	0.14
Induced Draft Fans	4	0.01	142	0.10	3	0.01	1	0.00	1	0.01	0.13	0.01	0.18

Thermal

(Detailed Component Outage Report - 2021 -2025)

Steam Turbine : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Turbine	48	0.39	98	0.20	10	0.00	14	0.06	20	1.92	2.57	0.63	0.95
Blades	1	0.17	0	0.00	0	0.00	1	0.06	8	0.15	0.38	0.28	0.27
Governing System	2	0.00	10	0.00	0	0.00	2	0.01	2	0.28	0.29	0.00	0.00
Rotors	3	0.16	1	0.00	0	0.00	0	0.00	0	0.00	0.16	0.26	0.26
Valve Gear	1	0.01	2	0.00	0	0.00	3	0.02	1	0.13	0.16	0.02	0.02
Bearings And Pedestals	5	0.02	4	0.00	0	0.00	1	0.02	1	0.02	0.06	0.04	0.04
Lubricating Oil System	16	0.05	1	0.00	0	0.00	0	0.00	0	0.00	0.05	0.08	0.08
Shaft Coupling Mechanism	0	0.00	0	0.00	0	0.00	1	0.01	1	0.02	0.03	0.00	0.00
Gland Seal System-Steam	6	0.02	5	0.01	0	0.00	0	0.00	0	0.00	0.03	0.03	0.04
Turbovisory	3	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Generating Unit Combustion



Combustion

(External Causes excluded - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
10-24	1.60	13.00	0.19	609.17	126.94	0.2068	54.00	46.00
25-49	18.54	191.00	0.41	1321.52	19.03	2.7449	1,244.00	1158.00
50 & OVER	11.99	100.00	0.21	410.53	18.14	1.0815	234.00	221.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	2.58	47.00	0.26	1321.52	49.13	0.4307	194.00	183.00
11TH-20TH	5.96	76.00	0.13	295.78	15.15	0.9091	453.00	413.00
21ST-30TH	3.99	35.00	0.07	139.17	17.51	0.5946	138.00	127.00
31ST-40TH	7.00	67.00	0.08	175.72	10.96	0.1597	81.00	79.00
41ST-50TH	12.60	79.00	0.26	609.17	29.00	1.9392	666.00	623.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	21.59	160.00	0.42	609.17	23.11	2.3050	792.00	741.00
11-20	1.00	6.00	0.02	134.33	23.31	0.0553	33.00	31.00
21-30	0.58	26.00	0.20	1321.52	65.88	0.2353	59.00	55.00
31-40	2.99	34.00	0.02	70.00	6.42	0.5439	306.00	285.00
51-60	1.00	14.00	0.01	45.75	6.94	0.0777	107.00	104.00
61-70	1.00	18.00	0.05	159.28	24.35	0.1379	71.00	65.00
71-80	3.00	45.00	0.09	295.78	17.52	0.5897	153.00	133.00
81-90	0.97	1.00	0.00	6.68	6.68	0.0885	11.00	11.00
Total	32.13	304.00	0.81	1321.52	23.35	4.0332	1,532.00	1425.00

Combustion

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
10-24	Unweighted	86.90	0.01	2.76	30.57	30.57	11.91	10.34	1.04	89.66	0.00	0.87	9.42
25-49	Unweighted	58.53	12.00	27.55	7.49	10.12	3.84	14.77	0.14	86.07	0.00	9.34	2.23
50 & OVER	Unweighted	82.82	7.99	8.71	16.44	17.87	2.30	9.01	0.19	91.54	0.00	6.44	1.73
10-24	Weighted	86.90	0.01	2.76	30.57	30.57	11.91	10.34	0.05	89.66	0.00	0.87	9.42
25-49	Weighted	51.78	12.60	33.54	7.12	9.64	4.28	15.66	0.00	85.32	0.00	9.54	2.57
50 & OVER	Weighted	76.42	3.75	14.45	12.20	12.65	2.57	9.72	0.00	90.87	0.00	6.57	2.02

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	56.00	18.96	27.67	26.97	27.95	12.98	0.07	0.34	83.68	1.25	0.02	10.22
11TH-20TH	Unweighted	27.16	8.61	57.91	3.64	3.97	2.97	0.03	0.08	85.07	0.37	0.02	2.19
21ST-30TH	Unweighted	42.44	0.00	44.46	3.78	6.04	4.60	0.04	0.08	86.90	1.10	0.03	1.75
31ST-40TH	Unweighted	97.47	0.20	0.24	79.79	79.79	3.62	0.00	3.34	97.72	0.00	0.00	1.20
41ST-50TH	Unweighted	84.27	16.69	1.80	30.07	38.16	3.22	0.01	1.07	86.08	2.89	0.01	2.01
0TH-10TH	Weighted	68.47	11.39	17.03	33.07	33.95	11.33	0.00	0.01	85.50	0.75	0.00	8.42
11TH-20TH	Weighted	27.00	8.54	58.05	3.73	4.05	3.04	0.00	0.00	85.05	0.37	0.00	2.25
21ST-30TH	Weighted	44.08	0.00	41.52	4.61	5.51	3.69	0.00	0.00	85.60	1.41	0.00	2.01
31ST-40TH	Weighted	97.16	0.07	0.27	80.57	80.57	3.86	0.00	0.04	97.43	0.00	0.00	1.43
41ST-50TH	Weighted	84.46	19.00	1.82	28.98	40.77	2.64	0.00	0.03	86.28	3.18	0.00	1.48

Combustion

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	88.64	9.93	1.47	37.59	43.33	4.80	10.48	1.10	90.11	1.71	6.26	1.92
11-20	Unweighted	78.07	0.00	16.40	8.87	8.87	3.34	5.53	0.07	94.47	0.00	3.93	1.60
21-30	Unweighted	34.55	24.29	26.12	56.38	58.53	40.19	40.62	0.91	60.66	5.58	0.00	33.76
31-40	Unweighted	45.26	10.99	36.96	2.19	3.09	2.16	18.13	0.08	82.22	0.55	16.40	0.83
51-60	Unweighted	37.22	34.83	55.23	1.97	2.34	1.69	7.77	0.14	92.45	0.00	6.44	1.11
61-70	Unweighted	15.97	18.73	70.44	6.63	6.70	5.66	13.79	0.11	86.41	0.07	8.51	5.00
71-80	Unweighted	4.50	0.00	78.22	3.69	5.44	5.19	19.66	0.09	82.73	1.60	12.67	3.00
81-90	Unweighted	4.37	0.00	86.78	0.09	0.09	0.09	8.85	0.01	91.15	0.07	8.71	0.08
0-10	Weighted	90.24	7.01	1.54	46.11	50.55	4.71	8.65	0.02	91.78	1.17	5.13	1.92
11-20	Weighted	78.07	0.00	16.40	8.87	8.87	3.34	5.53	0.00	94.47	0.00	3.93	1.60
21-30	Weighted	34.55	24.29	26.12	56.38	58.53	40.19	40.62	0.02	60.66	5.58	0.00	33.76
31-40	Weighted	45.26	10.99	36.96	2.19	3.09	2.16	18.13	0.00	82.22	0.55	16.40	0.83
51-60	Weighted	37.22	34.83	55.23	1.97	2.34	1.69	7.77	0.00	92.45	0.00	6.44	1.11
61-70	Weighted	15.97	18.73	70.44	6.63	6.70	5.66	13.79	0.00	86.41	0.07	8.51	5.00
71-80	Weighted	2.41	0.00	76.47	3.55	4.45	4.31	23.74	0.00	78.88	2.58	15.72	2.82
81-90	Weighted	4.37	0.00	86.78	0.09	0.09	0.09	8.85	0.00	91.15	0.07	8.71	0.08
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		69.22	9.79	19.09	10.93	13.11	3.94	12.38	13.83	88.30	1.45	7.75	2.49
Weighted		68.12	6.73	20.80	10.05	11.57	3.53	11.79	0.20	88.92	1.24	7.47	2.38

Combustion

(External Causes excluded - 2021 - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
10-24	5.55	21.00	0.70	4125.90	292.81	0.93	116.00	107.00
25-49	87.87	998.00	3.10	3334.43	27.17	10.64	5557.00	5219.00
50 & OVER	59.31	306.00	2.78	8184.15	79.49	5.78	1071.00	1030.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	10.45	88.00	0.38	1321.52	37.51	1.04	569.00	545.00
11TH-20TH	36.66	523.00	0.83	1706.45	13.83	4.34	2541.00	2354.00
21ST-30TH	28.33	136.00	1.22	8184.15	78.65	2.79	402.00	386.00
31ST-40TH	21.02	136.00	0.27	527.02	17.21	0.87	264.00	257.00
41ST-50TH	56.27	442.00	3.88	6177.17	76.96	8.31	2963.00	2809.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	107.33	671.00	5.27	8184.15	68.77	11.60	3608.00	3443.00
11-20	2.99	25.00	0.06	145.68	20.87	0.13	94.00	79.00
21-30	4.58	106.00	0.29	1321.52	23.64	0.63	454.00	409.00
31-40	3.99	48.00	0.07	337.67	12.40	0.64	393.00	364.00
41-50	6.94	136.00	0.20	304.78	12.60	1.14	523.00	485.00
51-60	6.97	63.00	0.10	361.50	13.81	0.52	639.00	620.00
61-70	3.00	26.00	0.25	1706.45	83.58	0.46	179.00	169.00
71-80	7.99	149.00	0.26	441.38	15.49	1.39	439.00	400.00
81-90	8.94	101.00	0.09	126.25	7.50	0.83	415.00	387.00

Combustion

(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
10-24	Unweighted	81.90	0.00	2.56	56.53	56.53	14.86	15.54	0.59	84.46	0.27	3.57	11.70
25-49	Unweighted	61.60	15.01	26.88	11.48	12.95	5.04	12.05	0.20	88.48	0.98	7.03	3.50
50 & OVER	Unweighted	83.77	8.90	6.70	40.27	40.54	5.48	9.65	0.20	90.47	0.12	4.77	4.64
10-24	Weighted	81.90	0.00	2.56	56.53	56.53	14.86	15.54	0.03	84.46	0.27	3.57	11.70
25-49	Weighted	55.36	16.72	33.13	9.09	10.60	4.87	12.16	0.00	88.48	1.04	7.16	3.32
50 & OVER	Weighted	78.33	4.19	10.65	32.21	32.32	6.07	11.14	0.00	88.98	0.22	5.61	5.19

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	58.42	14.42	32.10	10.07	10.91	5.54	9.90	0.13	90.52	0.49	5.40	3.60
11TH-20TH	Unweighted	35.98	15.87	52.92	4.04	5.00	3.58	11.73	0.13	88.90	0.51	8.36	2.23
21ST-30TH	Unweighted	78.11	1.16	12.42	25.08	25.92	7.38	9.71	0.12	90.53	0.26	4.96	4.25
31ST-40TH	Unweighted	95.18	16.61	0.93	57.06	61.27	5.51	4.13	1.23	96.11	0.16	2.46	1.27
41ST-50TH	Unweighted	83.57	12.96	2.08	69.89	70.58	8.47	14.60	1.71	85.65	1.06	6.46	6.82
0TH-10TH	Weighted	73.15	8.00	18.89	11.95	12.72	4.83	8.20	0.00	92.04	0.28	5.12	2.56
11TH-20TH	Weighted	43.38	11.91	44.51	4.90	5.80	3.76	12.61	0.00	87.89	0.42	9.39	2.31
21ST-30TH	Weighted	69.64	0.32	17.02	28.79	29.05	9.45	13.57	0.00	86.67	0.41	5.89	7.02
31ST-40TH	Weighted	96.15	10.40	0.62	63.06	65.95	5.33	3.38	0.03	96.77	0.09	2.00	1.13
41ST-50TH	Weighted	83.64	15.79	2.73	66.71	67.57	8.18	13.92	0.04	86.37	1.04	6.00	6.60

Combustion

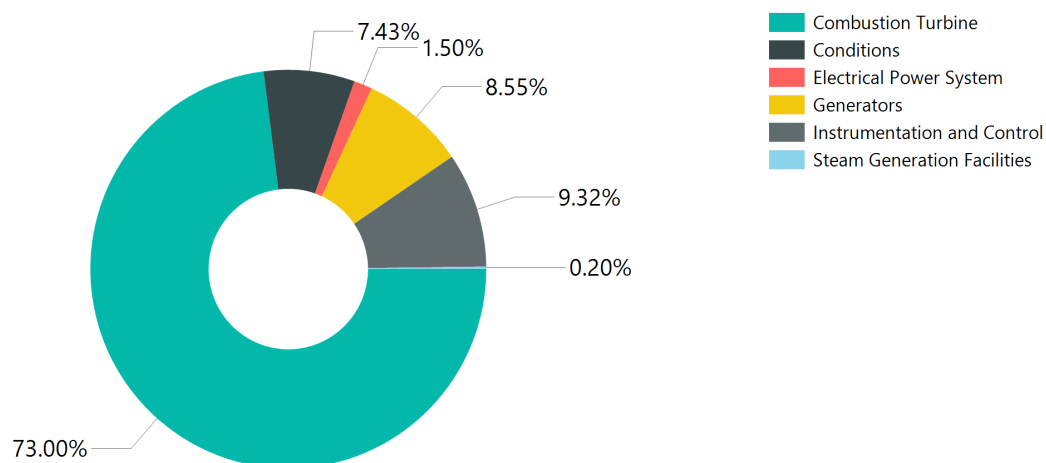
(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	0.01	10.31	1.48	70.80	71.49	8.14	10.68	1.55	89.49	0.59	5.06	4.85
11-20	Unweighted	0.30	0.00	15.67	11.24	11.24	4.22	4.26	0.02	95.74	0.00	2.27	1.99
21-30	Unweighted	0.15	48.14	25.57	19.63	20.21	8.39	13.81	0.27	86.81	1.23	5.71	6.25
31-40	Unweighted	0.14	17.33	35.88	4.50	5.20	2.95	16.05	0.08	84.29	0.48	13.53	1.70
41-50	Unweighted	0.06	29.60	47.04	5.57	6.30	4.22	16.31	0.20	84.25	0.50	12.45	2.80
51-60	Unweighted	0.06	25.65	56.92	2.43	3.00	2.21	7.46	0.08	92.94	0.25	5.39	1.42
61-70	Unweighted	0.06	8.68	67.78	10.86	10.89	9.05	15.32	0.05	84.78	0.34	6.62	8.26
71-80	Unweighted	0.01	2.47	75.91	4.15	5.25	4.85	17.39	0.16	83.89	1.38	11.44	3.29
81-90	Unweighted	0.01	1.88	86.90	1.09	2.75	2.65	9.22	0.09	92.26	0.71	6.07	0.96
0-10	Weighted	0.00	6.96	1.64	72.66	73.08	8.42	10.10	0.02	90.02	0.34	4.44	5.20
11-20	Weighted	0.00	0.00	15.83	10.74	10.74	4.10	4.52	0.00	95.48	0.00	2.62	1.90
21-30	Weighted	0.00	48.14	25.57	19.63	20.21	8.39	13.81	0.01	86.81	1.23	5.71	6.25
31-40	Weighted	0.00	17.33	35.88	4.50	5.20	2.95	16.05	0.00	84.29	0.48	13.53	1.70
41-50	Weighted	0.00	19.89	48.19	6.70	7.18	5.05	20.66	0.00	79.73	0.40	16.34	3.54
51-60	Weighted	0.00	25.65	56.92	2.43	3.00	2.21	7.46	0.00	92.94	0.25	5.39	1.42
61-70	Weighted	0.00	8.78	67.78	10.71	10.73	8.90	15.18	0.00	84.93	0.34	6.60	8.13
71-80	Weighted	0.00	1.22	75.51	5.53	6.04	5.78	21.45	0.00	79.66	1.81	14.10	4.43
81-90	Weighted	0.00	1.80	86.89	1.13	2.86	2.75	9.38	0.00	92.16	0.73	6.12	0.99
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		71.00	12.06	18.10	18.73	19.90	5.77	11.25	17.99	89.10	0.62	6.02	4.26
Weighted		70.64	8.36	18.12	20.16	20.99	6.00	11.55	0.28	88.75	0.49	6.11	4.65

Combustion

(Major Component Outage Report - 2021 -2025)

Major Component Contribution to Combustion Units 2021 -2025



Major Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Combustion Turbine	591	3.13	386	0.24	27	0.01	231	0.50	316	4.97	8.86	13.77	14.73
Conditions	145	0.40	25	0.00	15	0.00	31	0.08	27	0.43	0.90	1.75	1.74
Electrical Power System	6	0.00	0	0.00	1	0.02	2	0.04	3	0.12	0.18	0.02	0.02
Generators	115	0.61	3	0.00	0	0.00	17	0.02	35	0.40	1.04	2.70	2.68
Instrumentation and Control	612	0.49	95	0.05	81	0.03	71	0.05	32	0.52	1.13	2.14	2.36
Steam Generation Facilities	1	0.02	0	0.00	0	0.00	0	0.00	0	0.00	0.02	0.11	0.11
Total (Ext. Causes Excluded)	1325	4.26	484	0.29	109	0.29	321	0.62	386	6.00	11.23	18.73	19.89
Total (Ext. Causes Included)	1470	4.66	509	0.29	124	0.06	352	0.69	413	6.43	12.13	20.48	21.63

Combustion

(Detailed Component Outage Report - 2021 -2025)

Combustion Turbine : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Combustion Turbine	92	1.25	20	0.00	12	0.01	62	0.15	243	4.35	5.77	5.51	5.49
Compressor Shaft And Bearings For Tow-shaft Machine	3	0.64	0	0.00	0	0.00	0	0.00	0	0.00	0.64	2.81	2.79
Turning Gear System	6	0.04	2	0.09	0	0.00	1	0.23	0	0.00	0.36	0.15	0.55
Turbine Load Shaft And Bearing	7	0.31	1	0.00	0	0.00	0	0.00	4	0.04	0.35	1.36	1.35
Compressor	14	0.04	0	0.00	2	0.00	32	0.02	31	0.29	0.35	0.18	0.18
Low Pressure Turbine	1	0.27	0	0.00	0	0.00	0	0.00	0	0.00	0.27	1.20	1.20
Lubrication System	66	0.09	17	0.02	0	0.00	12	0.01	5	0.02	0.13	0.39	0.46
Cooling Water System	24	0.06	92	0.04	0	0.00	4	0.00	1	0.02	0.12	0.28	0.45
Fuel Supply System To Unit	85	0.06	28	0.00	0	0.00	14	0.01	8	0.05	0.12	0.25	0.27
Battery And Charger System	8	0.11	0	0.00	0	0.00	2	0.00	0	0.00	0.11	0.48	0.48

Combustion

(Detailed Component Outage Report - 2021 -2025)

Conditions : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Other	43	0.06	18	0.00	0	0.00	18	0.01	11	0.26	0.33	0.26	0.26
Problems - Primary Fuel for Units with Secondary Fuel Op.	11	0.21	3	0.00	0	0.00	4	0.01	1	0.02	0.23	0.90	0.90
Transmission Limitations	21	0.06	0	0.00	2	0.00	4	0.05	3	0.12	0.22	0.24	0.24
Site Environment, Storms, Floods	34	0.07	0	0.00	0	0.00	2	0.01	3	0.00	0.08	0.31	0.31
Transmission Line	15	0.00	0	0.00	0	0.00	0	0.00	5	0.01	0.02	0.02	0.02
Powerhouse substation (none-generating Equipment)	14	0.00	0	0.00	0	0.00	0	0.00	3	0.01	0.01	0.01	0.01
Poor Quality Fuel, Heat Content	0	0.00	2	0.00	5	0.00	1	0.00	1	0.00	0.00	0.00	0.00
Lack of Fuel Supplier good practices	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0.00	0.00	0.00
Labour Troubles	2	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.01	0.01
Nitrous Oxides	3	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0.00	0.00	0.00

Combustion

(Detailed Component Outage Report - 2021 -2025)

Electrical Power System : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Unit Service Transformer	6	0.00	0	0.00	1	0.02	2	0.04	3	0.12	0.18	0.02	0.02

Combustion

(Detailed Component Outage Report - 2021 -2025)

Generators : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator	6	0.31	1	0.00	0	0.00	0	0.00	8	0.17	0.48	1.36	1.36
Electrical Distribution System	28	0.14	0	0.00	0	0.00	5	0.01	15	0.05	0.20	0.62	0.62
Generator Rotor	1	0.00	0	0.00	0	0.00	0	0.00	3	0.14	0.14	0.00	0.00
Generator Output System	18	0.02	0	0.00	0	0.00	0	0.00	3	0.02	0.04	0.08	0.08
Excitation System	9	0.04	1	0.00	0	0.00	2	0.00	1	0.00	0.04	0.16	0.16
Generator Stator	4	0.03	0	0.00	0	0.00	1	0.00	0	0.00	0.03	0.13	0.13
Generator	8	0.02	0	0.00	0	0.00	0	0.00	1	0.01	0.03	0.07	0.07
Generator Lubrication System	23	0.01	0	0.00	0	0.00	6	0.01	1	0.00	0.02	0.05	0.05
Voltage Control Equipment	2	0.02	0	0.00	0	0.00	0	0.00	0	0.00	0.02	0.10	0.10
Generator Bearings	5	0.02	0	0.00	0	0.00	0	0.00	1	0.00	0.02	0.10	0.10

Combustion

(Detailed Component Outage Report - 2021 -2025)

Instrumentation and Control : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Controls And Instrumentation-General	165	0.18	7	0.00	5	0.00	27	0.02	11	0.20	0.41	0.81	0.81
Combustion Turbine Controls and	216	0.13	25	0.01	0	0.00	15	0.01	8	0.23	0.38	0.57	0.62
Fuel Management Controls And	140	0.06	52	0.02	74	0.03	8	0.00	1	0.01	0.12	0.27	0.38
Generator Controls and Instrumentation	22	0.03	11	0.02	0	0.00	6	0.01	3	0.03	0.09	0.13	0.20
Main Power Output Systems -	23	0.02	0	0.00	0	0.00	11	0.00	7	0.04	0.07	0.10	0.10
Switching Equipment Control	11	0.03	0	0.00	0	0.00	0	0.00	1	0.00	0.04	0.15	0.15
Auxiliaries Controls And Instrumentation	22	0.02	0	0.00	0	0.00	1	0.00	1	0.00	0.02	0.09	0.09
System Control Facilities	5	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.01	0.01
Main Power Output Systems – Control and Protection	4	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0.00	0.00	0.00
Governing Systems	0	0.00	0	0.00	2	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Gas Turbines Instrumentation & Controls	1	0.00	0	0.00	0	0.00	2	0.00	0	0.00	0.00	0.00	0.00

Combustion

(Detailed Component Outage Report - 2021 -2025)

Steam Generation Facilities : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Intermediate Pressure Steam Piping	1	0.02	0	0.00	0	0.00	0	0.00	0	0.00	0.02	0.11	0.11

Generating Unit Nuclear



Nuclear

(External Causes excluded - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
400-599	3.28	3.00	0.10	678.70	300.88	0.1415	4.00	4.00
600-799	1.00	2.00	0.07	385.92	290.87	0.4451	3.00	3.00
800 & OVER	2.11	2.00	0.04	283.07	171.74	0.0710	2.00	2.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
31ST-40TH	3.92	3.00	0.05	283.07	152.32	0.0913	3.00	3.00
41ST-50TH	2.47	4.00	0.16	678.70	342.73	0.5662	6.00	6.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	0.00	0.00	0.00	0.00	0.00	0.0000	0.00	0.00
51-60	1.00	2.00	0.07	385.92	290.87	0.4451	3.00	3.00
71-80	0.71	1.00	0.01	110.47	110.47	0.0397	2.00	2.00
91-100	4.68	4.00	0.13	678.70	283.92	0.1727	4.00	4.00
Total	6.39	7.00	0.21	678.70	261.13	0.6575	9.00	9.00

Nuclear

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
400-599	Unweighted	5.16	0.00	91.84	2.73	3.03	3.02	3.54	0.01	96.99	0.00	0.43	2.58
600-799	Unweighted	0.00	0.00	55.49	10.69	10.69	8.09	44.51	0.02	55.49	0.00	37.86	6.64
800 & OVER	Unweighted	2.09	0.00	96.60	1.33	2.15	2.10	2.37	0.01	98.69	0.00	0.00	1.31
400-599	Weighted	5.16	0.00	91.84	2.73	3.03	3.02	3.54	0.00	96.99	0.00	0.43	2.58
600-799	Weighted	0.00	0.00	55.49	10.69	10.69	8.09	44.51	0.00	55.49	0.00	37.86	6.64
800 & OVER	Weighted	2.09	0.00	96.60	1.33	2.15	2.10	2.37	0.00	98.69	0.00	0.00	1.31

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
31ST-40TH	Unweighted	1.25	0.00	97.70	1.06	1.64	1.63	0.00	0.01	98.96	0.00	0.00	1.04
41ST-50TH	Unweighted	6.87	0.00	74.71	6.53	6.80	6.79	0.07	0.02	81.59	0.00	0.05	5.22
31ST-40TH	Weighted	1.51	0.00	97.37	1.14	1.79	1.78	0.00	0.00	98.88	0.00	0.00	1.12
41ST-50TH	Weighted	6.24	0.00	72.94	6.83	7.09	7.07	0.00	0.00	79.18	0.00	0.00	5.35

Nuclear

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted						0.00						
51-60	Unweighted	0.00	0.00	55.49	10.69	10.69	8.09	44.51	0.02	55.49	0.00	37.86	6.64
71-80	Unweighted	20.16	0.00	76.86	1.61	2.08	2.03	3.97	0.01	97.02	0.00	1.72	1.26
91-100	Unweighted	1.12	0.00	96.72	2.19	2.72	2.72	2.88	0.01	97.84	0.00	0.00	2.16
0-10	Weighted						0.00						
51-60	Weighted	0.00	0.00	55.49	10.69	10.69	8.09	44.51	0.00	55.49	0.00	37.86	6.64
71-80	Weighted	20.16	0.00	76.86	1.61	2.08	2.03	3.97	0.00	97.02	0.00	1.72	1.26
91-100	Weighted	1.38	0.00	96.69	1.96	2.57	2.57	2.74	0.00	98.07	0.00	0.00	1.93
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		3.36	0.00	89.08	2.84	3.33	3.32	8.22	0.84	92.44	0.00	4.95	2.61
Weighted		3.00	0.00	89.67	2.66	3.21	3.21	8.05	0.00	92.67	0.00	4.87	2.45

Nuclear

(External Causes excluded - 2021 - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
400-599	22.15	24.00	0.57	1055.75	209.55	3.99	40.00	40.00
600-799	4.99	8.00	0.74	3652.05	806.70	1.86	12.00	12.00
800 & OVER	9.20	17.00	0.46	750.90	238.19	1.23	16.00	16.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
21ST-30TH	3.67	6.00	0.11	435.45	154.54	0.59	7.00	7.00
31ST-40TH	22.98	32.00	0.94	1055.75	258.39	4.20	44.00	44.00
41ST-50TH	9.69	11.00	0.72	3652.05	576.02	2.28	17.00	17.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	0.11	1.00	0.03	265.35	265.35	0.05	1.00	1.00
11-20	0.12	0.00	0.00	0.00		0.00	0.00	0.00
31-40	1.00	1.00	0.42	3652.05	3652.05	0.68	2.00	2.00
41-50	0.46	1.00	0.01	72.62	72.62	0.03	0.00	0.00
51-60	4.62	7.00	0.11	385.92	137.36	1.75	12.00	12.00
61-70	4.88	6.00	0.22	750.90	321.91	1.69	10.00	10.00
71-80	6.46	11.00	0.45	1055.75	356.56	1.50	15.00	15.00
81-90	4.30	7.00	0.17	630.22	214.50	0.57	9.00	9.00
91-100	14.38	15.00	0.37	678.70	215.02	0.80	19.00	19.00

Nuclear

(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
400-599	Unweighted	3.47	0.00	83.48	2.42	3.36	3.35	14.39	0.01	86.95	0.00	10.98	2.07
600-799	Unweighted	0.23	0.00	62.99	18.89	19.04	13.17	37.13	0.01	63.22	2.20	19.85	14.73
800 & OVER	Unweighted	2.60	0.00	89.04	4.05	5.24	4.64	9.99	0.01	91.64	0.00	4.60	3.76
400-599	Weighted	3.46	0.00	83.49	2.42	3.36	3.35	14.39	0.00	86.96	0.00	10.97	2.07
600-799	Weighted	0.23	0.00	62.99	18.89	19.04	13.17	37.13	0.00	63.22	2.20	19.85	14.73
800 & OVER	Weighted	2.60	0.00	89.04	4.05	5.24	4.64	9.99	0.00	91.64	0.00	4.60	3.76

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
21ST-30TH	Unweighted	0.00	0.00	87.19	2.84	3.77	3.66	14.27	0.02	87.19	0.00	10.26	2.55
31ST-40TH	Unweighted	2.92	0.00	83.37	3.87	4.80	4.79	14.91	0.01	86.28	0.39	9.97	3.35
41ST-50TH	Unweighted	3.70	0.00	79.84	6.66	7.60	7.58	17.97	0.01	83.54	0.00	10.76	5.70
21ST-30TH	Weighted	0.00	0.00	87.19	2.84	3.77	3.66	14.27	0.00	87.19	0.00	10.26	2.55
31ST-40TH	Weighted	3.02	0.00	84.29	4.16	5.14	5.14	13.96	0.00	87.32	0.41	8.61	3.66
41ST-50TH	Weighted	3.53	0.00	78.20	7.71	8.62	8.60	19.72	0.00	81.73	0.00	11.74	6.53

Nuclear

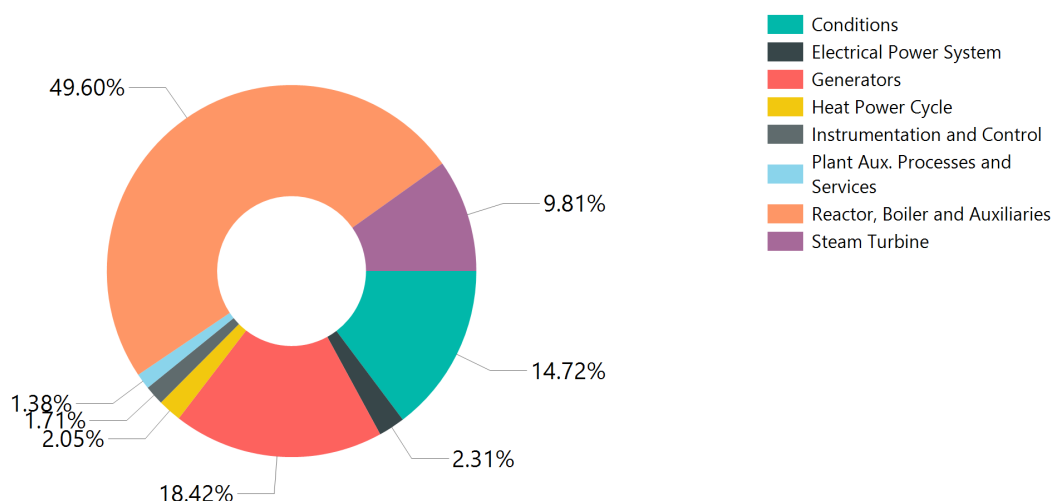
(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	0.00	0.00	76.51	23.49	24.27	23.91	39.11	0.00	76.51	0.00	0.00	23.49
11-20	Unweighted	0.00	0.00	100.00	0.00	0.39	0.00	0.39	0.00	100.00	0.00	0.00	0.00
31-40	Unweighted	0.00	0.00	31.92	56.57	56.57	26.54	68.08	0.00	31.92	0.00	26.50	41.58
41-50	Unweighted	0.00	0.00	98.29	1.71	1.92	1.92	6.88	0.02	98.29	0.00	0.00	1.71
51-60	Unweighted	0.02	0.00	61.29	3.13	3.86	3.84	31.54	0.00	69.33	0.00	28.70	1.98
61-70	Unweighted	0.02	0.00	64.81	5.41	6.57	6.56	28.36	0.01	73.07	0.00	23.22	3.71
71-80	Unweighted	0.00	0.00	79.44	6.78	7.85	7.23	19.31	0.02	82.04	0.00	12.18	5.77
81-90	Unweighted	0.00	0.00	88.72	3.71	4.39	4.38	11.46	0.01	89.47	2.20	4.90	3.43
91-100	Unweighted	0.00	0.00	96.56	1.97	2.96	2.96	4.20	0.01	97.16	0.00	0.90	1.94
0-10	Weighted	0.00	0.00	76.51	23.49	24.27	23.91	39.11	0.00	76.51	0.00	0.00	23.49
11-20	Weighted	0.00	0.00	100.00	0.00	0.39	0.00	0.39	0.00	100.00	0.00	0.00	0.00
31-40	Weighted	0.00	0.00	31.92	56.57	56.57	26.54	68.08	0.00	31.92	0.00	26.50	41.58
41-50	Weighted	0.00	0.00	98.29	1.71	1.92	1.92	6.88	0.00	98.29	0.00	0.00	1.71
51-60	Weighted	0.00	0.00	63.47	3.17	3.81	3.79	30.17	0.00	70.60	0.00	27.32	2.08
61-70	Weighted	0.00	0.00	64.85	6.34	7.44	7.43	26.98	0.00	74.36	0.00	21.25	4.39
71-80	Weighted	0.00	0.00	79.17	6.59	7.71	7.08	20.20	0.00	81.14	0.00	13.28	5.59
81-90	Weighted	0.00	0.00	88.60	4.35	5.18	5.18	11.62	0.00	89.52	2.38	4.05	4.04
91-100	Weighted	0.00	0.00	96.57	2.04	3.07	3.07	4.10	0.00	97.26	0.00	0.73	2.01
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		2.87	0.00	82.72	4.55	5.48	5.47	15.72	0.91	85.59	0.25	10.22	3.94
Weighted		2.75	0.00	83.21	4.81	5.77	5.76	15.38	0.00	85.96	0.26	9.58	4.21

Nuclear

(Major Component Outage Report - 2021 -2025)

Major Component Contribution to Nuclear Units 2021 -2025



Major Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Conditions	1	0.03	258	0.00	1	0.00	0	0.00	8	2.69	2.71	0.03	0.03
Electrical Power System	5	0.39	7	0.03	0	0.00	0	0.00	0	0.00	0.43	0.45	0.49
Generators	10	1.63	8	0.03	2	0.00	0	0.00	4	1.73	3.39	1.88	1.92
Heat Power Cycle	3	0.15	110	0.19	30	0.04	0	0.00	0	0.00	0.38	0.17	0.38
Instrumentation and Control	2	0.19	151	0.05	63	0.08	0	0.00	0	0.00	0.31	0.22	0.27
Plant Aux. Processes and Services	3	0.09	94	0.07	7	0.01	0	0.00	1	0.08	0.25	0.11	0.18
Reactor, Boiler and Auxiliaries	21	1.23	70	0.36	86	0.34	1	0.25	19	6.96	9.14	1.42	1.83
Steam Turbine	5	0.25	37	0.08	14	0.02	0	0.00	4	1.45	1.81	0.29	0.39
Total (Ext. Causes Excluded)	49	3.94	477	0.81	202	0.81	1	0.25	28	10.22	15.72	4.55	5.48
Total (Ext. Causes Included)	50	3.97	735	0.81	203	0.50	1	0.25	36	12.91	18.43	4.57	5.50

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Conditions : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Other	1	0.03	98	0.00	0	0.00	0	0.00	8	2.69	2.71	0.03	0.03
Cooling Water Discharge Thermal Effects	0	0.00	145	0.00	1	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Site Environment, Storms, Floods	0	0.00	14	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Transmission Limitations	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Electrical Power System : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator Power Transformers	4	0.37	4	0.02	0	0.00	0	0.00	0	0.00	0.39	0.42	0.45
Station Service Power Distribution	1	0.03	2	0.00	0	0.00	0	0.00	0	0.00	0.03	0.03	0.04
Unit Service Transformer	0	0.00	1	0.01	0	0.00	0	0.00	0	0.00	0.01	0.00	0.01

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Generators : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator	3	0.96	3	0.01	2	0.00	0	0.00	3	1.52	2.50	1.11	1.12
Generator Liquid Cooling System	1	0.27	1	0.00	0	0.00	0	0.00	1	0.21	0.48	0.31	0.31
Excitation Systems Equipment	5	0.33	3	0.02	0	0.00	0	0.00	0	0.00	0.34	0.38	0.39
Hydrogen Gas Cooling System	1	0.08	1	0.00	0	0.00	0	0.00	0	0.00	0.08	0.09	0.09

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Heat Power Cycle : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Main Condensate Circuit	2	0.10	44	0.06	9	0.00	0	0.00	0	0.00	0.16	0.11	0.18
Condensor	0	0.00	37	0.09	16	0.03	0	0.00	0	0.00	0.12	0.00	0.10
Boiler Feed Pumps And Auxiliaries	1	0.05	4	0.01	0	0.00	0	0.00	0	0.00	0.06	0.06	0.07
Feedwater Heater Drains System	0	0.00	24	0.03	1	0.00	0	0.00	0	0.00	0.03	0.00	0.03
High Pressure Feedwater Heaters And Auxiliaries	0	0.00	0	0.00	4	0.01	0	0.00	0	0.00	0.01	0.00	0.00
Extraction Steam System	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Instrumentation and Control : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
System Control Facilities	2	0.19	0	0.00	0	0.00	0	0.00	0	0.00	0.19	0.22	0.22
Reactor And Auxiliaries - Instrumentation and Control	0	0.00	42	0.04	33	0.07	0	0.00	0	0.00	0.11	0.00	0.04
Boiler Feedwater Systems - Instrumentation and Control	0	0.00	3	0.00	2	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Reactor Control Systems (Reactor Regulating Systems) Instrum. & Control	0	0.00	103	0.00	28	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Steam Turbine And Auxiliary - Instrumentation and Control	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
System Shutdown	0	0.00	2	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Plant Aux. Processes and Services : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Circulating Water Piping	1	0.03	92	0.07	6	0.01	0	0.00	0	0.00	0.10	0.03	0.11
Containment Atmosphere System Heating, Ventilation and Cooling Systems	0	0.00	0	0.00	1	0.01	0	0.00	1	0.08	0.09	0.00	0.00
Powerhouse Heating & Ventilating System	1	0.05	0	0.00	0	0.00	0	0.00	0	0.00	0.05	0.06	0.06
Instrument Air System	1	0.02	1	0.00	0	0.00	0	0.00	0	0.00	0.02	0.02	0.02
Circulating Water Pumps	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Reactor, Boiler and Auxiliaries : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Main Heat Transport Circuit	7	0.31	7	0.01	25	0.13	1	0.25	12	5.97	6.66	0.36	0.37
Fuel Handling	4	0.25	39	0.29	53	0.16	0	0.00	1	0.13	0.83	0.28	0.62
Negative Pressure Containment System	1	0.01	1	0.00	5	0.02	0	0.00	4	0.72	0.74	0.01	0.01
Reactor	2	0.33	0	0.00	0	0.00	0	0.00	0	0.00	0.33	0.38	0.38
Reactor Reactivity Control Units	2	0.13	4	0.02	2	0.03	0	0.00	0	0.00	0.17	0.15	0.17
Boiler Steam And Water Systems	1	0.16	11	0.01	0	0.00	0	0.00	0	0.00	0.17	0.18	0.19
Fueling Machine	0	0.00	0	0.00	0	0.00	0	0.00	1	0.11	0.11	0.00	0.00
Reactor Fuel Channel Assemblies	0	0.00	0	0.00	1	0.00	0	0.00	1	0.04	0.04	0.00	0.00
Primary Heat Transport And Inventory Control Systems	2	0.02	2	0.01	0	0.00	0	0.00	0	0.00	0.03	0.02	0.03
Reactor Shut-Off Units	1	0.02	2	0.00	0	0.00	0	0.00	0	0.00	0.02	0.02	0.02

Nuclear

(Detailed Component Outage Report - 2021 -2025)

Steam Turbine : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Turbine	4	0.24	10	0.01	6	0.00	0	0.00	4	1.45	1.70	0.28	0.30
Steam Reheater	0	0.00	17	0.06	4	0.02	0	0.00	0	0.00	0.08	0.00	0.07
Moisture Separator	0	0.00	8	0.01	3	0.01	0	0.00	0	0.00	0.02	0.00	0.01
Lubricating Oil System	1	0.01	0	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01
Gland Seal System	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Valve Gear	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Governing System	0	0.00	0	0.00	1	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Generating Unit Thermal Combined



Thermal Combined Cycle Steam

(External Causes excluded - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
60-99	3.00	22.00	0.05	84.17	19.66	0.5209	32.00	32.00
100-199	2.00	18.00	0.08	405.58	39.74	0.3510	34.00	30.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	4.00	31.00	0.10	405.58	28.17	0.5174	54.00	50.00
11TH-20TH	1.00	9.00	0.03	84.17	30.52	0.3545	12.00	12.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
61-70	1.00	9.00	0.03	84.17	30.52	0.3545	12.00	12.00
71-80	1.00	12.00	0.08	405.58	58.62	0.2218	19.00	19.00
81-90	2.00	13.00	0.01	59.70	9.40	0.2194	24.00	20.00
91-100	1.00	6.00	0.01	22.28	7.94	0.0761	11.00	11.00
Total	5.00	40.00	0.13	405.58	28.70	0.8719	66.00	62.00

Thermal Combined Cycle Steam

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
60-99	Unweighted	0.46	0.00	82.18	1.96	1.96	1.95	17.36	0.10	82.64	0.00	14.67	1.65
100-199	Unweighted	3.11	0.00	80.57	4.82	6.27	6.13	17.55	0.10	83.68	0.00	12.07	4.08
60-99	Weighted	0.44	0.00	83.57	1.85	1.85	1.84	15.99	0.00	84.01	0.00	13.52	1.57
100-199	Weighted	3.13	0.00	80.39	5.02	6.53	6.38	17.75	0.00	83.53	0.00	12.04	4.25

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	1.72	0.00	85.96	2.82	3.51	3.46	0.04	0.09	87.68	0.34	0.03	2.49
11TH-20TH	Unweighted	0.70	0.00	63.85	4.68	4.68	4.63	0.40	0.16	64.55	2.12	0.34	3.14
0TH-10TH	Weighted	2.01	0.00	84.76	3.33	4.20	4.14	0.00	0.00	86.77	0.28	0.00	2.92
11TH-20TH	Weighted	0.70	0.00	63.85	4.68	4.68	4.63	0.01	0.00	64.55	2.12	0.01	3.14

Thermal Combined Cycle Steam

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
61-70	Unweighted	0.70	0.00	63.85	4.68	4.68	4.63	35.45	0.16	64.55	2.12	30.20	3.14
71-80	Unweighted	3.75	0.00	76.44	9.51	12.32	11.94	22.18	0.18	80.20	0.35	11.43	8.03
81-90	Unweighted	1.43	0.00	87.64	0.79	0.83	0.82	10.97	0.06	89.07	0.00	10.24	0.70
91-100	Unweighted	0.27	0.00	92.11	0.59	0.59	0.59	7.61	0.07	92.39	1.03	6.04	0.54
61-70	Weighted	0.70	0.00	63.85	4.68	4.68	4.63	35.45	0.00	64.55	2.12	30.20	3.14
71-80	Weighted	3.75	0.00	76.44	9.51	12.32	11.94	22.18	0.00	80.20	0.35	11.43	8.03
81-90	Weighted	1.52	0.00	87.39	0.74	0.78	0.77	11.14	0.00	88.90	0.00	10.45	0.65
91-100	Weighted	0.27	0.00	92.11	0.59	0.59	0.59	7.61	0.00	92.39	1.03	6.04	0.54
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		1.52	0.00	81.54	3.11	3.70	3.65	17.44	8.83	83.05	0.70	13.63	2.62
Weighted		1.83	0.00	81.93	3.48	4.25	4.19	16.90	0.10	83.76	0.53	12.76	2.95

Thermal Combined Cycle Steam

(External Causes excluded - 2021 - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
60-99	17.01	56.00	0.48	1701.22	75.15	5.80	116.00	116.00
100-199	6.04	43.00	0.24	532.95	48.03	0.89	81.00	76.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	16.05	73.00	0.59	1701.22	70.36	3.71	145.00	140.00
11TH-20TH	7.00	26.00	0.13	540.40	43.74	2.98	52.00	52.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	0.00	0.00	0.00	0.00		0.00	0.00	0.00
11-20	2.00	0.00	0.00	0.00		1.20	3.00	3.00
31-40	1.00	1.00	0.00	1.00	1.00	0.41	7.00	7.00
51-60	1.00	6.00	0.08	540.40	113.33	0.20	9.00	9.00
61-70	2.00	11.00	0.03	84.17	27.13	0.65	20.00	20.00
71-80	6.00	40.00	0.48	1701.22	105.39	2.19	69.00	68.00
81-90	5.00	29.00	0.12	527.20	34.74	1.05	51.00	47.00
91-100	6.05	12.00	0.01	22.28	5.94	0.99	38.00	38.00

Thermal Combined Cycle Steam

(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
100-199	Unweighted	1.39	0.00	84.31	4.42	4.98	4.91	14.79	0.09	85.70	0.25	10.15	3.90
60-99	Unweighted	4.52	0.00	75.14	3.62	16.14	15.87	34.12	0.05	79.66	3.68	13.83	2.82
100-199	Weighted	1.39	0.00	84.28	4.48	5.05	4.99	14.84	0.00	85.66	0.25	10.13	3.95
60-99	Weighted	3.96	0.00	76.47	3.84	19.11	18.83	35.46	0.00	80.43	3.35	13.17	3.05

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	0.77	0.00	85.89	4.08	14.22	14.10	23.14	0.06	86.66	0.68	9.01	3.65
11TH-20TH	Unweighted	10.43	0.00	58.41	3.08	8.57	8.27	42.60	0.07	68.84	7.59	21.71	1.85
0TH-10TH	Weighted	0.89	0.00	85.33	4.29	14.56	14.43	23.66	0.00	86.22	0.67	9.29	3.82
11TH-20TH	Weighted	10.43	0.00	58.41	3.08	8.57	8.27	42.60	0.00	68.84	7.59	21.71	1.85

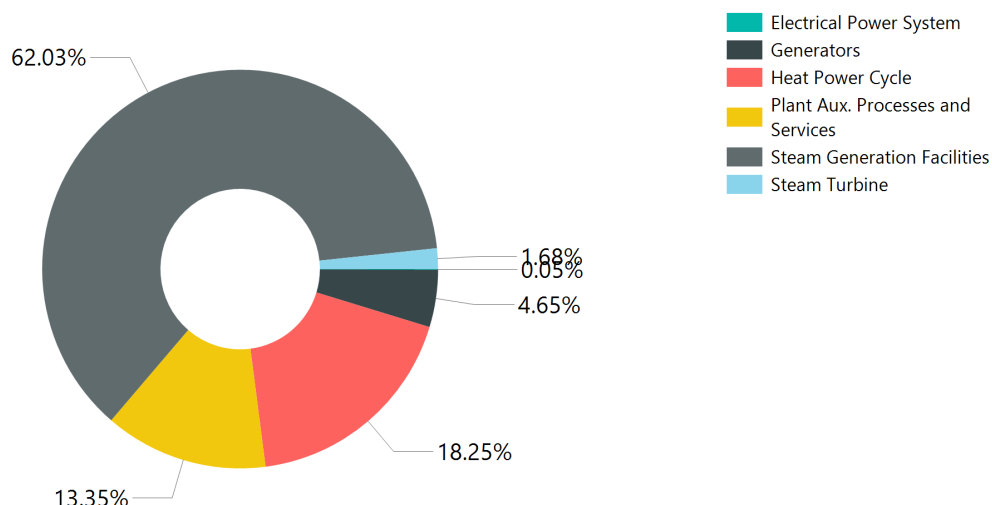
Thermal Combined Cycle Steam

(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted						0.00						
11-20	Unweighted	0.12	0.00	18.49	0.00	0.00	0.00	60.20	0.00	40.03	9.23	50.74	0.00
31-40	Unweighted	0.26	0.00	66.13	0.02	9.85	9.85	40.55	0.02	88.52	5.19	6.28	0.01
51-60	Unweighted	0.00	0.00	81.53	8.67	10.21	6.48	20.38	0.07	81.53	0.28	10.45	7.74
61-70	Unweighted	0.01	0.00	67.34	2.47	2.47	2.40	32.63	0.09	69.69	13.50	15.10	1.70
71-80	Unweighted	0.00	0.00	75.82	9.57	23.83	23.48	36.46	0.10	76.94	1.28	13.76	8.02
81-90	Unweighted	0.00	0.00	87.17	2.57	6.64	6.59	21.04	0.06	88.39	0.45	8.86	2.30
91-100	Unweighted	0.00	0.00	95.42	0.14	12.42	12.42	16.37	0.02	95.81	0.54	3.52	0.13
0-10	Weighted						0.00						
11-20	Weighted	0.00	0.00	18.49	0.00	0.00	0.00	60.20	0.00	40.03	9.23	50.74	0.00
31-40	Weighted	0.00	0.00	66.13	0.02	9.85	9.85	40.55	0.00	88.52	5.19	6.28	0.01
51-60	Weighted	0.00	0.00	81.53	8.67	10.21	6.48	20.38	0.00	81.53	0.28	10.45	7.74
61-70	Weighted	0.00	0.00	67.34	2.47	2.47	2.40	32.63	0.00	69.69	13.50	15.10	1.70
71-80	Weighted	0.00	0.00	76.16	9.64	22.90	22.56	35.15	0.00	77.36	1.19	13.32	8.13
81-90	Weighted	0.00	0.00	86.77	2.19	5.41	5.37	19.05	0.00	87.99	0.32	9.74	1.94
91-100	Weighted	0.00	0.00	95.23	0.13	13.35	13.35	17.36	0.00	95.73	0.52	3.62	0.12
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		3.70	0.00	77.54	3.85	12.94	12.72	29.05	5.15	81.24	2.78	12.87	3.11
Weighted		3.01	0.00	79.35	4.09	13.59	13.39	27.87	0.06	82.36	2.21	12.05	3.38

Thermal Combined Cycle Steam (Major Component Outage Report - 2021 -2025)

Major Component Contribution to Thermal Combined Cycle Steam Units 2021 -2025



Major Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Electrical Power System	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Generators	0	0.00	0	0.00	0	0.00	4	0.30	0	0.00	0.30	0.00	0.00
Heat Power Cycle	0	0.00	0	0.00	1	0.01	2	1.18	0	0.00	1.19	0.00	0.00
Plant Aux. Processes and Services	0	0.00	0	0.00	0	0.00	1	0.29	1	0.58	0.87	0.00	0.00
Steam Generation Facilities	1	0.01	0	0.00	7	0.20	1	0.01	3	3.82	4.04	0.01	0.01
Steam Turbine	0	0.00	0	0.00	1	0.01	1	0.10	0	0.00	0.11	0.00	0.00
Total (Ext. Causes Excluded)	2	0.01	0	0.00	9	0.00	9	1.88	4	4.40	6.52	0.01	0.01
Total (Ext. Causes Included)	2	0.01	0	0.00	9	0.22	9	1.88	4	4.40	6.52	0.01	0.01

Thermal Combined Cycle Steam

(Detailed Component Outage Report - 2021 -2025)

Electrical Power System : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator Power Transformers	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Thermal Combined Cycle Steam

(Detailed Component Outage Report - 2021 -2025)

Generators : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Seal Oil System	0	0.00	0	0.00	0	0.00	1	0.24	0	0.00	0.24	0.00	0.00
Generator Collector And Brushes	0	0.00	0	0.00	0	0.00	3	0.06	0	0.00	0.06	0.00	0.00

Thermal Combined Cycle Steam

(Detailed Component Outage Report - 2021 -2025)

Heat Power Cycle : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Boiler Feed Pump Motors And Auxiliaries	0	0.00	0	0.00	0	0.00	1	1.02	0	0.00	1.02	0.00	0.00
Deaerator, Storage Tank, And Auxiliaries	0	0.00	0	0.00	0	0.00	1	0.16	0	0.00	0.16	0.00	0.00
Condensor	0	0.00	0	0.00	1	0.01	0	0.00	0	0.00	0.01	0.00	0.00

Thermal Combined Cycle Steam

(Detailed Component Outage Report - 2021 -2025)

Plant Aux. Processes and Services : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Circulating Water Systems	0	0.00	0	0.00	0	0.00	1	0.29	1	0.58	0.87	0.00	0.00

Thermal Combined Cycle Steam

(Detailed Component Outage Report - 2021 -2025)

Steam Generation Facilities : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Steam Generator/HRSG	0	0.00	0	0.00	3	0.10	1	0.01	3	3.82	3.93	0.00	0.00
Superheater/High Pressure Section	0	0.00	0	0.00	4	0.10	0	0.00	0	0.00	0.10	0.00	0.00
Safety Valves	1	0.01	0	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01

Thermal Combined Cycle Steam

(Detailed Component Outage Report - 2021 -2025)

Steam Turbine : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Turbine	0	0.00	0	0.00	1	0.01	1	0.10	0	0.00	0.11	0.00	0.00

Generating Unit Combined Combustion



Combined Combustion Units

(External Causes excluded - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
25-49	11.65	6.00	0.01	60.58	20.99	1.0991	164.00	163.00
50 & OVER	4.95	27.00	0.06	197.73	19.46	0.5910	151.00	150.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	9.65	28.00	0.07	197.73	21.53	1.2176	136.00	134.00
11TH-20TH	0.95	2.00	0.00	4.42	2.58	0.1214	58.00	58.00
21ST-30TH	6.00	3.00	0.00	24.00	14.41	0.3510	121.00	121.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
41-50	0.65	0.00	0.00	0.00	0.00	0.1935	4.00	4.00
61-70	2.00	2.00	0.00	18.60	9.62	0.1499	44.00	44.00
71-80	8.95	7.00	0.02	60.58	21.01	0.7818	202.00	201.00
81-90	5.00	24.00	0.06	197.73	20.21	0.5649	65.00	64.00
Total	16.59	33.00	0.07	197.73	19.73	1.6900	315.00	313.00

Combined Combustion Units

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
25-49	Unweighted	24.68	0.00	66.87	0.14	0.14	0.13	8.45	0.01	91.55	0.00	6.86	0.11
50 & OVER	Unweighted	7.74	0.00	81.92	1.44	3.22	3.10	11.82	0.07	89.67	0.00	8.65	1.20
25-49	Weighted	23.30	0.00	67.74	0.15	0.15	0.14	8.96	0.00	91.04	0.00	7.45	0.12
50 & OVER	Weighted	3.98	0.00	84.08	2.27	4.57	4.48	13.92	0.00	88.06	0.00	9.32	1.95

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	10.41	0.00	77.94	0.84	1.48	1.44	0.01	0.04	88.35	0.66	0.01	0.69
11TH-20TH	Unweighted	56.15	0.00	38.84	0.03	1.21	1.29	0.03	0.03	95.00	0.24	0.03	0.03
21ST-30TH	Unweighted	23.85	0.00	70.30	0.12	0.12	0.11	0.01	0.01	94.15	2.44	0.01	0.08
0TH-10TH	Weighted	5.69	0.00	82.15	1.90	3.67	3.59	0.00	0.00	87.83	0.70	0.00	1.62
11TH-20TH	Weighted	44.62	0.00	49.06	0.04	1.58	1.65	0.00	0.00	93.68	0.30	0.00	0.04
21ST-30TH	Weighted	23.85	0.00	70.30	0.12	0.12	0.11	0.00	0.00	94.15	2.44	0.00	0.08

Combined Combustion Units

(External Causes excluded - 2025 - Indicators: Weighted + Unweighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	100.00	0.00	0.00	0.00	0.00	0.00	0.00		100.00	0.00	0.00	0.00
41-50	Unweighted	38.03	0.00	42.62	0.00	0.00	0.00	19.35	0.00	80.65	0.00	19.35	0.00
61-70	Unweighted	25.57	0.00	66.94	0.16	0.16	0.16	7.50	0.02	92.50	2.98	4.40	0.11
71-80	Unweighted	16.82	0.00	74.75	0.25	0.58	0.57	8.69	0.01	91.57	1.28	6.97	0.19
81-90	Unweighted	3.79	0.00	85.94	1.27	2.45	2.41	11.30	0.06	89.73	0.85	8.32	1.11
0-10	Weighted	100.00	0.00	0.00	0.00	0.00	0.00	0.00		100.00	0.00	0.00	0.00
41-50	Weighted	38.03	0.00	42.62	0.00	0.00	0.00	19.35	0.00	80.65	0.00	19.35	0.00
61-70	Weighted	25.57	0.00	66.94	0.16	0.16	0.16	7.50	0.00	92.50	2.98	4.40	0.11
71-80	Weighted	15.31	0.00	75.12	0.33	0.76	0.73	9.90	0.00	90.43	0.99	8.33	0.25
81-90	Weighted	2.16	0.00	86.01	2.35	4.63	4.57	13.84	0.00	88.17	0.81	8.96	2.07
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		19.97	0.00	71.05	0.52	1.04	0.99	9.39	2.19	91.02	1.21	7.36	0.41
Weighted		10.88	0.00	78.24	1.56	3.09	2.98	12.15	0.03	89.13	0.92	8.65	1.30

Combined Combustion Units

(External Causes excluded - 2021 - 2025 - Non-Weighted Indicators)

Classification By MCR

MCR	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
25-49	61.42	90.00	4.45	8759.98	432.72	9.14	657.00	655.00
50 & OVER	20.97	145.00	0.27	406.38	16.59	2.36	779.00	774.00

Classification By Year of Service

Year of Service	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0TH-10TH	50.67	174.00	4.64	8759.98	233.79	8.58	872.00	865.00
11TH-20TH	13.71	30.00	0.04	94.97	10.41	1.70	260.00	260.00
21ST-30TH	18.02	31.00	0.04	56.00	11.57	1.22	304.00	304.00

Classification By OP Factor

Operating Factor	Unit Years	Forced Outages	Total FOT	Max FOD	Mean FOD	Total EQ	Attempted Starts	Successful Starts
0-10	1.00	1.00	1.00	8759.98	8759.98	1.00	0.00	0.00
21-30	2.00	2.00	1.36	6297.18	5967.97	1.36	5.00	5.00
41-50	1.65	2.00	0.46	4054.97	2030.55	0.69	9.00	9.00
51-60	2.00	5.00	0.65	3919.93	1137.09	0.91	13.00	13.00
61-70	16.85	78.00	0.52	2374.05	58.23	2.82	458.00	454.00
71-80	22.91	40.00	0.47	1866.80	102.73	2.34	474.00	473.00
81-90	25.93	86.00	0.21	406.38	21.03	2.12	389.00	387.00
91-100	10.05	21.00	0.05	231.57	21.33	0.26	88.00	88.00

Combined Combustion Units

(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By MCR (%)

MCR	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
25-49	Unweighted	12.53	0.00	73.19	8.56	8.78	7.85	14.50	0.02	85.71	0.77	6.47	7.05
50 & OVER	Unweighted	9.16	0.00	82.11	1.56	2.80	2.47	11.22	0.07	91.27	0.63	6.80	1.30
25-49	Weighted	12.02	0.00	73.01	9.58	9.78	8.78	15.16	0.00	85.03	0.75	6.27	7.95
50 & OVER	Weighted	5.08	0.00	85.27	2.09	3.20	3.02	11.18	0.00	90.34	0.44	7.39	1.82

Classification By Year of Service (%)

Year of Service	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0TH-10TH	Unweighted	8.62	0.00	75.77	10.62	11.31	10.37	16.81	0.04	84.39	0.59	5.92	9.09
11TH-20TH	Unweighted	18.19	0.00	70.80	0.31	0.53	0.51	11.31	0.03	88.99	0.60	10.17	0.24
21ST-30TH	Unweighted	14.94	0.00	78.29	0.29	0.29	0.26	6.78	0.02	93.23	1.24	5.30	0.23
0TH-10TH	Weighted	5.96	0.00	81.28	6.37	7.22	6.80	13.90	0.00	87.24	0.47	6.73	5.55
11TH-20TH	Weighted	17.66	0.00	71.37	0.30	0.66	0.64	11.39	0.00	89.03	0.68	10.06	0.24
21ST-30TH	Weighted	14.94	0.00	78.29	0.29	0.29	0.26	6.78	0.00	93.23	1.24	5.30	0.23

Combined Combustion Units

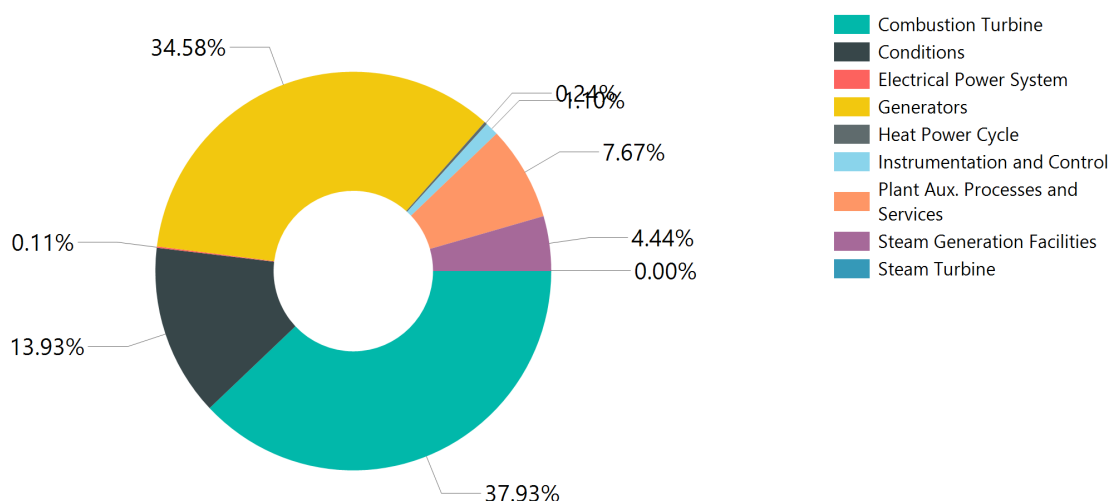
(External Causes excluded - 2021 - 2025 - Indicators: Weighted + Non-Weighted)

Classification By OP Factor (%)													
Operating Factor	Wgt	ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
0-10	Unweighted	0.29	0.00	0.00	50.00	50.00	50.00	50.00		50.00	0.00	0.00	50.00
21-30	Unweighted	0.03	0.00	26.18	72.24	72.24	68.25	68.13	0.02	31.87	0.00	0.00	68.13
41-50	Unweighted	0.11	0.00	45.43	26.84	26.84	26.14	34.44	0.03	65.56	0.00	11.26	23.18
51-60	Unweighted	0.02	0.00	56.02	36.68	42.82	41.00	45.34	0.03	60.29	0.11	7.15	32.45
61-70	Unweighted	0.01	0.00	67.42	4.32	5.27	4.33	16.60	0.04	85.93	1.26	9.75	3.05
71-80	Unweighted	0.01	0.00	75.75	2.62	2.79	2.47	10.18	0.02	90.00	0.83	7.13	2.04
81-90	Unweighted	0.00	0.00	85.91	0.92	1.21	1.17	8.16	0.04	92.10	0.65	6.46	0.79
91-100	Unweighted	0.00	0.00	95.68	0.53	0.62	0.61	2.56	0.02	97.53	0.37	1.59	0.51
0-10	Weighted	0.01	0.00	0.00	56.25	56.25	56.25	56.25		43.75	0.00	0.00	56.25
21-30	Weighted	0.00	0.00	26.18	72.24	72.24	68.25	68.13	0.00	31.87	0.00	0.00	68.13
41-50	Weighted	0.00	0.00	45.43	26.84	26.84	26.14	34.44	0.00	65.56	0.00	11.26	23.18
51-60	Weighted	0.00	0.00	55.45	38.03	43.33	41.55	45.33	0.00	59.60	0.12	6.25	34.03
61-70	Weighted	0.00	0.00	67.46	4.39	5.62	4.59	17.18	0.00	86.05	1.19	9.65	3.11
71-80	Weighted	0.00	0.00	76.02	2.52	2.75	2.44	10.20	0.00	90.03	0.72	7.28	1.97
81-90	Weighted	0.00	0.00	85.40	2.28	3.26	3.17	11.66	0.00	89.19	0.58	8.24	2.00
91-100	Weighted	0.00	0.00	95.49	0.75	0.96	0.96	3.55	0.00	96.66	0.16	2.46	0.72
Total		ABNOF	Sync CD	OP Factor	FOR	DAFOR	DAUFOP	ICBF	Fail Rate	AF	MOF	POF	FOF
Unweighted		11.68	0.00	75.42	6.79	7.27	6.51	13.68	2.79	87.10	0.73	6.55	5.61
Weighted		8.07	0.00	79.99	5.23	5.95	5.52	12.90	0.05	88.05	0.57	6.91	4.46

Combined Combustion Units

(Major Component Outage Report - 2021 -2025)

Major Component Contribution to Combined Combustion Units Units 2021 -2025



Major Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Combustion Turbine	91	0.48	211	0.25	198	0.37	66	0.32	129	4.50	5.92	0.58	0.88
Conditions	13	1.64	10	0.00	11	0.00	8	0.03	12	0.50	2.18	1.98	1.99
Electrical Power System	5	0.02	0	0.00	0	0.00	1	0.00	0	0.00	0.02	0.02	0.02
Generators	27	4.91	2	0.00	2	0.01	18	0.11	5	0.37	5.40	5.95	5.94
Heat Power Cycle	3	0.01	3	0.01	0	0.00	5	0.02	0	0.00	0.04	0.01	0.02
Instrumentation and Control	49	0.05	43	0.02	1	0.00	13	0.10	0	0.00	0.17	0.06	0.08
Plant Aux. Processes and Services	12	0.02	38	0.04	1	0.00	12	0.09	13	1.04	1.20	0.03	0.07
Steam Generation Facilities	46	0.13	46	0.07	0	0.00	14	0.07	7	0.42	0.69	0.16	0.24
Steam Turbine	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Total (Ext. Causes Excluded)	234	5.61	343	0.39	202	0.39	129	0.71	154	6.34	13.44	6.79	7.26
Total (Ext. Causes Included)	247	7.25	353	0.40	213	0.39	137	0.74	166	6.84	15.62	8.77	9.25

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Combustion Turbine : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Combustion Turbine (CCU)	54	0.34	172	0.22	163	0.33	25	0.09	116	4.27	5.25	0.41	0.68
Unit Fuel Controls & Conditioning	4	0.01	11	0.02	32	0.03	0	0.00	0	0.00	0.06	0.01	0.03
Fuel Supply System To Unit	9	0.04	1	0.00	0	0.00	5	0.02	0	0.00	0.05	0.04	0.04
Lubrication System	3	0.01	0	0.00	0	0.00	5	0.04	0	0.00	0.05	0.02	0.02
Compressor (CTU)	2	0.01	1	0.00	0	0.00	3	0.01	5	0.02	0.04	0.01	0.01
Air-Cooled Condenser Tubes	2	0.03	2	0.00	0	0.00	0	0.00	0	0.00	0.03	0.04	0.04
Starting System	0	0.00	0	0.00	0	0.00	2	0.03	0	0.00	0.03	0.00	0.00
Air Filters (CTU)	1	0.00	18	0.01	0	0.00	9	0.02	1	0.00	0.03	0.00	0.01
Shaft Machine	0	0.00	0	0.00	3	0.02	2	0.01	0	0.00	0.03	0.00	0.00
Turbine Load Shaft And Bearing	2	0.00	0	0.00	0	0.00	3	0.02	0	0.00	0.02	0.00	0.00

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Conditions : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Liquid And Chemical Effluents	1	1.19	0	0.00	0	0.00	0	0.00	0	0.00	1.19	1.44	1.44
Other Environmental Restriction	2	0.42	3	0.00	0	0.00	3	0.01	0	0.00	0.43	0.51	0.51
Transmission Limitations	0	0.00	0	0.00	1	0.00	0	0.00	6	0.29	0.29	0.00	0.00
Transmission Equipment beyond the transmission line	0	0.00	0	0.00	0	0.00	0	0.00	6	0.21	0.21	0.00	0.00
Other	8	0.03	3	0.00	9	0.00	1	0.00	0	0.00	0.03	0.03	0.03
Lack of Fuel Supplier good practices	0	0.00	0	0.00	1	0.00	2	0.01	0	0.00	0.01	0.00	0.00
Poor Quality Fuel, Heat Content	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0.00	0.00	0.00
Site Environment, Storms and Floods	1	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Site Environment – Storms	1	0.00	2	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Electrical Power System : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Electrical Distribution System (CTU)	5	0.02	0	0.00	0	0.00	1	0.00	0	0.00	0.02	0.02	0.02

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Generators : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Generator (CTU)	14	2.50	0	0.00	2	0.01	5	0.03	1	0.02	2.55	3.03	3.02
Generator Rotor	3	1.61	0	0.00	0	0.00	0	0.00	0	0.00	1.61	1.95	1.95
Generator Stator	1	0.01	0	0.00	0	0.00	1	0.03	2	0.34	0.38	0.02	0.02
Generator Output System (CTU)	4	0.01	0	0.00	0	0.00	0	0.00	0	0.00	0.01	0.02	0.02
Generator Collector & Brushes	0	0.00	0	0.00	0	0.00	4	0.01	0	0.00	0.01	0.00	0.00
Excitation System	3	0.01	2	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01
Generator Bearings	0	0.00	0	0.00	0	0.00	2	0.00	0	0.00	0.00	0.00	0.00
Voltage Control Equipment	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Heat Power Cycle : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
HRSG Feedwater Piping and Supports	2	0.01	0	0.00	0	0.00	4	0.02	0	0.00	0.03	0.01	0.01
Air Extraction System Vacuum Pump, Motor and Auxiliaries	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.01
High Pressure Feedwater Heaters And	0	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.01
Circulating Water Screenwash System	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0.00	0.00	0.00
Lightning	1	0.00	1	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Instrumentation and Control : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Auxiliaries -Controls & Instrumentation	2	0.00	0	0.00	0	0.00	7	0.07	0	0.00	0.08	0.00	0.00
Boiler Feedwater System I&C (FGU)	16	0.01	11	0.00	0	0.00	1	0.01	0	0.00	0.03	0.01	0.02
Controls and Instrumentation	16	0.02	5	0.00	1	0.00	2	0.00	0	0.00	0.02	0.02	0.02
Combustion Turbine Controls and	10	0.01	13	0.00	0	0.00	1	0.01	0	0.00	0.02	0.01	0.01
Ignition Fuel;Fuel Gas; & Miscellaneous Fuel	1	0.00	13	0.01	0	0.00	0	0.00	0	0.00	0.01	0.00	0.02
Fuel Management Controls And	0	0.00	1	0.00	0	0.00	1	0.01	0	0.00	0.01	0.00	0.00
System Control Facilities	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Plant Auxiliary Instrumentation and Control	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Steam Turbine And Auxiliary - Instrumentation and Control	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Generator Controls and Instrumentation	0	0.00	0	0.00	0	0.00	1	0.00	0	0.00	0.00	0.00	0.00

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Plant Aux. Processes and Services : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Cooling Water System (CTU)	1	0.00	7	0.00	0	0.00	2	0.01	9	1.03	1.05	0.00	0.00
Circulating Water Systems	1	0.00	25	0.03	0	0.00	2	0.02	0	0.00	0.05	0.00	0.03
Closed Circuit Cooling Water System Heat Exchanger	0	0.00	3	0.00	0	0.00	6	0.04	0	0.00	0.04	0.00	0.00
Building Fire Protection (CTU)	4	0.01	0	0.00	0	0.00	2	0.02	4	0.01	0.03	0.01	0.01
Circulating Water Biological Conditions	2	0.01	1	0.01	0	0.00	0	0.00	0	0.00	0.02	0.01	0.02
Circulating Water Piping & Supports	2	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Turbine Supports and Piping Drains	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00
Circulating Water Pumps	1	0.00	2	0.00	1	0.00	0	0.00	0	0.00	0.00	0.00	0.00

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Steam Generation Facilities : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
HRSG	17	0.05	23	0.06	0	0.00	9	0.06	6	0.42	0.58	0.06	0.13
Low Pressure Steam Piping	1	0.03	0	0.00	0	0.00	0	0.00	0	0.00	0.03	0.04	0.04
HRSG Low Pressure Section	3	0.01	19	0.00	0	0.00	2	0.00	0	0.00	0.01	0.01	0.01
High Pressure Steam Piping	4	0.01	0	0.00	0	0.00	0	0.00	0	0.00	0.01	0.02	0.02
HRSG High Pressure Section	2	0.01	1	0.00	0	0.00	1	0.00	0	0.00	0.01	0.01	0.01
Attemperation	7	0.01	2	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01
Reheat Steam Piping	0	0.00	0	0.00	0	0.00	2	0.01	0	0.00	0.01	0.00	0.00
Water Treatment Plant	6	0.01	0	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01
HRSG Intermediate Pressure Section	4	0.01	0	0.00	0	0.00	0	0.00	0	0.00	0.01	0.01	0.01
Intermediate Presssure Steam Piping	0	0.00	0	0.00	0	0.00	0	0.00	1	0.00	0.00	0.00	0.00

Combined Combustion Units

(Detailed Component Outage Report - 2021 -2025)

Steam Turbine : Top 10 Components based on ICBF

Component	Forced Outage		Forced Derating		Scheduled Derating		Maint. Outage		Planned Outage		Contribution to Unit		
	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	OCC	ICBF	ICBF	FOR	DAFOR
Turbine	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.00	0.00	0.00

